





LOMBARD

# North Sea oil is a special case

BY C. GORDON TETHER

THE Conservative Party is committed to lauding the virtues of the private enterprise way of life. So one can readily understand in objecting on principle to nationalisation operations which can be held to have been solely motivated by doctrinaire considerations. Yet North Sea oil is so much in the nature of a special case that it is astonishing to see Mr. Thatcher unhesitatingly pledging a future Tory administration last week to reverse the Government's plan to give the nation a 51 per cent stake in the industry.

In recent years, almost every major oil-producing country in the world that had originally entrusted the exploitation of its oil resources to foreign concerns has taken steps to repossess them—mostly through nationalisation exercises of one kind or another. And the strength of their case for doing so has been so widely acknowledged that the process has met with almost no resistance either from the dispossessed international oil concerns or from the governments of the countries in which they are based.

## Their mistake

In their anxiety to start getting their hands on the North Sea windfall at top speed, successive British Governments made the mistake of allowing ownership of a large part of this great national asset to pass into foreign hands—unlike their Norwegian counterparts which, from the start, have put strict limits on foreign penetration of the new discoveries. There is, therefore, a strong case on national grounds for taking a sizeable part of the industry into State ownership as a means of ensuring that the nation at large derives a reasonable share of the benefit of its inheritance.

In short, the argument here as to whether nationalisation is advantageous or not is of quite a different order from the standard one—that is that relating to the nationalisation of industries that are in home ownership. And, in disregarding this, the Tory Party is not showing itself as mindful as it should be of the importance of putting the country's interests above party considerations.

Needless to say, the process of reacquiring the nation's lost assets does run some risk of slowing down the pace of development. The international oil concerns which at present own the lion's share of the industry may be found less enthusiastic about making a maximum effort to get the oil out of the ground if they know they will have to be content with a smaller share of the spoils. And money will have to be found to

buy out the part of their stake that is to be nationalised.

But an impressive case can be made out for ensuring that our oil is not extracted so fast that it has all been used up by the time supplies from alternative sources are becoming more difficult to obtain. And it is expected that this point will be reached by around the turn of the century. Moreover, the penalties incurred by bringing the industry into national ownership can be of a much more modest order than they are often represented to be.

Experience shows that the international oil companies are prepared to provide equipment and know-how for the development of oil resources which they do not own if they are adequately remunerated for furnishing such services. And it is safe to assume that this would be true in our case. As for the money needed to buy them out, they are themselves financing their North Sea operations to a large extent on international money mobilised in the Euro-currency markets. There is no reason why the British authorities should not obtain most of the cash needed to take over their holdings from the same source.

In trying to justify pledging a future Tory administration to restore North Sea oil to private ownership, Mr. Thatcher said that it was absolutely absurd for a Government not over-flush with money to make nationalisation of the industry a top priority in preference to using oil royalties to provide the housing, roads, schools and hospitals which are needed. In doing so, she revealed an acute lack of acquaintance with the financial realities of the matter.

## Fixed interest

As I pointed out above, nationalisation would not necessarily entail adding to the Government's financing problems in any material way. And far from diminishing the amount of money available for the exploitation of the nation's oil resources for promoting the other good causes Mrs. Thatcher listed, it should eventually augment it by ensuring that a larger proportion of the proceeds finish up in British hands.

In the last resort, there is everything to be said in these difficult times for relying—to the extent that we have to go abroad for finance to develop our resources—on fixed interest rather than equity funds. The nationalisation of the oil industry recognises this fact of our national financial life. And it is hard to see what possible justification there could be on national grounds for reversing the process once it had been carried through.

THE WEEK IN THE COURTS

# Last word not yet spoken on deposits problem

BY JUSTINIAN

EVERYONE, a distinguished judge once proclaimed, knows what a deposit is. Not only was that altogether too rash an assumption, but the courts continue to be asked to resolve issues about deposits, as the Vacation Judge, Mr. Justice Oliver, found last week in *Windward Securities Ltd. v. Lorillard Ltd. and Lester*.

The basic rules about deposits pose few problems. The deposit of money in contracts for sale and purchase serves two purposes: it is a guarantee of performance of the contract as well as being payment on account. Where money is deposited only during the negotiations for a contract not in fact concluded, the amount is ordinarily recoverable by the depositor. The sole exception to that would be where the depositor acted in such a way as to show his acceptance of the negotiating document as a binding contract.

Where money is deposited with the other contracting party on the formation of a binding contract, the courts interpret the deposit as a security for performance, and hence to be forfeited if the depositor in breach of the contract fails to perform his side of the bargain. If the transaction goes through, the deposit performs its secondary role as part payment of the purchase price.

## Damage

Where the contract provides for forfeiture if the purchaser fails to complete his side of the bargain, the courts will not generally entertain a claim by the purchaser to recover his deposit. That remains the rule even though the vendor is not in a position to prove actual damage flowing from the purchaser's breach of contract. If, of course, the vendor can establish damage in excess of the deposited amount, he can claim damages while giving credit for the amount of the deposit.

In such circumstances a vendor may often obtain a windfall. If at the time when the contract was due for completion the value of the property had greatly increased, the vendor would not only retain the deposit but would also take a profit from the value of the property itself. There is a certain inequity about that, particularly since, if the property had fallen in value by the time the contract was due to be com-

pleted the forfeiture of the deposit would be in part, if not wholly, a compensation. Accordingly, purchasers who default have from time to time claimed that there is a principle of equity which would give relief against a forfeited deposit. And here comes the rub. As Lord Hale said in 1971 when presiding over the Judicial Committee of the Privy Council in an appeal from the courts of Malaya, there are cases when equity would relieve the purchaser who has paid a deposit and then defaulted, "although it is to be said that the last word has not yet been spoken on the subject." He was prophetic, since only this year the Law Commission issued a working paper setting out tentative proposals for reform.

One of the factors that might lead the courts to conclude that forfeiture was unconscionable and to grant relief to the purchaser would be the size of the deposit. Lord Hale said in the case of *Windward Securities Ltd. v. Lorillard Ltd. and Lester* that there was nothing unusual or extortionate in a 10 per cent deposit on a contract for the sale of land. While such a percentage of the purchase price is normal practice, this might not be conclusive against granting relief. Merely because a trade association or even a professional body representing its members recommended a stated proportion of the price as a deposit, that would not preclude relief. But, in the absence of any statutory provision, it would be a bold court that disregarded an established practice.

The action brought before Mr. Justice Oliver was a case in point. The parties had contracted the sale of certain properties in London for some £235m. The deposit lodged, according to the terms of the contract of sale, was £235,000. A firm of surveyors had written a letter to the purchasers giving the worth of the properties at the time the contract was due to be completed, at £25m. On the purchaser's default, the vendors were, thus, making a profit of £150,000 in addition to the £235,000 forfeited deposit. That said, the purchasers, was unfair. It was unconscionable for the vendors to walk away from an abortive contract with a profit of £385,000.

Since there was no question of fraud or sharp practice (in which cases the courts would undoubtedly intervene), could

the court properly deny the vendors their entitlement to a forfeited deposit? Mr. Justice Oliver clearly thought that he had no power to order any relief, although he acknowledged that there was some suggestion in the body of case-law that the courts had jurisdiction to remedy the forfeiture when the nature of a penalty.

The Law Commission favours a review of the court's power to grant relief against forfeiture. There is a distinction between contracts for the sale of land and of other property. The validity of a provision for forfeiture of a deposit would depend on whether the amount of the deposit represented a genuine pre-estimate of the loss likely to be occasioned by a breach of contract.

## Land deals

The judge who thought that everyone knew what a deposit was probably had in mind only land transactions. They do stand on a somewhat different footing. Since most house-purchasers act on legal advice, the true nature of a deposit is probably better understood. The Law Commission, therefore, proposes a special rule for land transactions. So long as the deposit does not exceed a statutorily specified percentage it should be valid and subject to forfeiture. The Law Commission thinks that 10 per cent is too high; 5 per cent is preferred. If a 5 per cent deposit were forfeited, a vendor could still sue if he suffered a greater loss as a result of a breach of contract. A statutory limit on the percentage that might be forfeited would not prevent the parties agreeing on a higher figure, but this would be subject to review by the courts. It would have to be justified in the same way as any other deposit. If it were to be regarded as penalty, the courts would then grant relief.

*The Times Law Report, September 9, 1975.*

TENNIS

BY JOHN E.

# A taste of competition

WHILE THE international spotlight has been focused on the magnificent exploits of our Elizabeth Locke of King's College, this week-end there have been other events, less spectacular perhaps, but no less important in their way, taking place at home.

On Saturday at Queen's Club we saw the culmination of a season's activity in the school with the International Finals of the Nestlé's boys and girls tennis competitions. It is estimated that some 40,000 competitors in Ireland, Scotland, Wales and England took part in the ladder events in the schools, age groups, under 21, under 18 and under 14 at B.P. House, headquarters, Britannia House, Sydneyham. But heavy rain prevented an early start. This tournament is another of those season-long affairs open to

Essex, who beat Arbuthnot's Alec Chisholm 6-1, 6-2 and Judith Erskine of Crief who allowed Elizabeth Locke of King's College to make mistakes against her negative but patient rallying and won 6-4, 6-0.

Currie can consider himself fortunate for he was reintroduced into the draw as a lucky loser when one of the national finalists withdrew and then proceeded to beat the boy who had originally eliminated him.

Yesterday the finals of the B.P. Shield national tournament were played in three age groups, under 21, under 18 and under 14 at B.P. House, headquarters, Britannia House, Sydneyham. But heavy rain prevented an early start. This tournament is another of those season-long affairs open to

the 1,200 members of the International Tennis Federation, all of whom must be at least one year old in an official 1975 season. The 24 finalists included 16 past national junior champions. The rain which fell yesterday underlining the lack of indoor tennis in Britain—a shortsighted before and on reasons this country in the world race for national supremacy. Until we can provide in this country the demands of an average of £30,000 a year British Petroleum Shield plough a junior development, only a modest harvest.

RUGBY

BY PETER RO

# Tasks ahead of the game

IT IS a galling thing to admit, but for the past decade English rugby followers have been conscious of the standard of English rugby. Some supporters have had to endure endless immingling and the embarrassing sympathy of the other nationalities.

Setting aside the familiar (and in many cases genuine) reasons for failure, one is bound to ask the structure of our game and its administration and competition is as good as it might be.

At a dinner given in his honour by his club, Darlington, Tarn Barbridge, the President of the RFU, said that his two major tasks this season were the elimination of foul play and a rapprochement between the major clubs and the minor clubs. He also mentioned the need for a second and logical step in the view.

What are the major clubs really trying to convey to the Union? In a nutshell, that the Union, because it is run by county-elected representatives, cannot understand the problems of the clubs. With the trebling of rates, the rise in service costs, increased transport and food costs, every club has to keep its head above water. Local authorities must be much to ease the burden but this would not be the major club's problem. The major club's problem is the lack of a league, the RFU introduced a league which until now has been a shambolic mess. Player Organisation demand more a skilled marketing sorship. One other area looking at urgently is players' possibly mental edge with the club. As to four play, full-time players, decent sportsmen. We must hope that the ing and long saccinate the psyche. There is no place for

civilised odds, with the senior club has to keep its head above water. Local authorities must be much to ease the burden but this would not be the major club's problem. The major club's problem is the lack of a league, the RFU introduced a league which until now has been a shambolic mess. Player Organisation demand more a skilled marketing sorship. One other area looking at urgently is players' possibly mental edge with the club. As to four play, full-time players, decent sportsmen. We must hope that the ing and long saccinate the psyche. There is no place for

club has to keep its head above water. Local authorities must be much to ease the burden but this would not be the major club's problem. The major club's problem is the lack of a league, the RFU introduced a league which until now has been a shambolic mess. Player Organisation demand more a skilled marketing sorship. One other area looking at urgently is players' possibly mental edge with the club. As to four play, full-time players, decent sportsmen. We must hope that the ing and long saccinate the psyche. There is no place for

FOOTBALL

BY TREVOR E

# Positive football at its best

QUEEN'S PARK Rangers have been unbeaten since 1-0 on Saturday at Loftus Road, but would have been in no way flattered if they had won this very entertaining game with a brilliant first half by three clear goals.

The outcome was that eventually the home supporters were grateful to hear the final whistle. Although as they could envisage the visitors snatching a point they would not have deserved through showing it was difficult to see them remaining, or indeed, how they came to be there.

The Rangers took an early lead, when a set piece from a short corner ended with Webb, nodding home after Gillard's headed flick from the great post had rebounded off the crossbar. From then until the interval it was largely a case of attack and counter-attack. As the game flowed fast and free from end to end, the home side looked the more cultured and dangerous.

The Rangers enjoyed much the better of the second half but failed to capitalise upon their ascendancy, particularly in mid-field, because they squandered a number of comparatively easy chances. Bowles missed a penalty, awarded for a foul on his replacement, achieved little other than a heavy tackle on two colleagues, both unmarked.

Although the th wards missed too unities, they trouble most defe have acquired understanding, but their essential. Bowles, who had a better bet in Cu However, I can hear them in action as tribute to their ex The Manchester who contain a high of morons than comparatively il before, dust. One susp the to the army duty than to a s in attitude. The time must b pick of an impressive trio. He when other club failed to sell tickets t ascendancy, particularly in mid-field, because they squandered a number of comparatively easy chances. Bowles missed a penalty, awarded for a foul on his replacement, achieved little other than a heavy tackle on two colleagues, both unmarked.

Although the th wards missed too unities, they trouble most defe have acquired understanding, but their essential. Bowles, who had a better bet in Cu However, I can hear them in action as tribute to their ex The Manchester who contain a high of morons than comparatively il before, dust. One susp the to the army duty than to a s in attitude. The time must b pick of an impressive trio. He when other club failed to sell tickets t ascendancy, particularly in mid-field, because they squandered a number of comparatively easy chances. Bowles missed a penalty, awarded for a foul on his replacement, achieved little other than a heavy tackle on two colleagues, both unmarked.

HORSE TRIALS

BY MICHAEL L

# Success for Miss Pattinson

MISS ALY PATTINSON, riding her brown gelding, Carawich, won the Burghley Horse Trials at Stamford, Lincoln, yesterday, with a total of 84.67 penalty points.

Second was Captain Mark Phillips, riding Gretna Green, with 71.53 penalty points, third was Mr. Richard Mead, riding Tommy Buck, with 73.53 points, and Mr. John Kersley, riding Seaborn, with 74.53 points, was fourth.

The final show jumping phase of this year's Burghley three-day event was very close, with only the price of two fences separating the first eight riders. The final result was in doubt until the last moment, with several overnight placing dramatically switched as some competi-

tors had fences down. Miss Pattinson was formerly a successful show jumper before turning to three-day events. She had her first big success in this field last autumn when she won the Midlands Bank Open Horse Trials Championship at Cirencester, also riding Carawich. Her performance at Burghley must have shown the selectors for the British team for next year's Olympics that she is worth consideration for the short list.

This year the course at Burghley was especially tough, with fences, and of the 53 entered that phase of the event, in which he came on second was left to him only last time. This largely, horses were compared to inexperienced.

of her falls at the Horse Trials in G. Richard Mead's was also creditable. He was riding his new Buck, for only a few. Although he is probably the best rider in the world, Olympic gold medalist, numerous other horses is a newcomer to the event.

Gold medals Captain Phillips rode two horses in this year's trials, but the horse on which he came on second was left to him only last time. This largely, horses were compared to inexperienced.

RACING

BY DOMINIC M

# Premier Cru should sparkle

IT SEEMS unlikely that there has been an easier winner of the St. Leger than Bruni, who had 10 lengths to spare over King Pellinore in the 1970th running of the race's oldest classic. Sent into the lead half-a-mile from home, Bruni forged right away from the opposition to win as he pleased, with ears pricked and Tony Murray standing up in the stirrups. He was one of three runners from Capt. Ryan Price's Findon stable.

There can be little doubt that Mr. Charles St. George's grey St. Hawk II, who was completing a double after winning Milt. Reef's one-and-a-quarter mile course record at Sandown a fortnight ago, is now a top-class performer.

If, as seems probable judged by his owner's enthusiasm for the plan, Bruni is sent to France to take on Allez France, a company in the Prix de l'Arc de Triomphe on October 5, it is difficult to visualise him failing to go close.

Edinburgh 3.00—River Petterli 2.30—Premier Cru 4.00—Troopette 4.30—Galle Law 2.00—Winton 2.30—Oats 3.30—Pampered Niss 4.00—Escapologist 4.00—Wolverhampton 1.45—Harry Carter 2.15—Cally Rose 2.35—Bamburgh 4.45—Brompton Square

The afternoon had the longest priced of season being future Flying Childers Stakes 100-1 shot. Little home by half a length odds-on. Muste Boy finished a long way behind. Scoble's Brasley, a plain. Little Glory's improvement since the told the stewards that Tikkoo's, good-looking two-year-old had been before the York. explanation was seen. One man who will have been racing at Edinburgh is the trainer, Paul Cole. fine chance of a valuable Cruden and Handicap (3.30) will be contested. Premier chestnut three-year-old of highly extensible behaviour from the Irish, Miss Tobbia, May, and with only a before being led, riderless, in the gaining the third career.

## TV Radio

† Indicates programme in black and white

### BBC 1

12.25 p.m. Doubts and Certainties. 12.55 p.m. 100 Pebbles. 1.15 p.m. Andy Pandy. 2.35 p.m. Regional News (except London). 4.00 p.m. Jackanory. 4.45 p.m. Blue Peter. 5.10 p.m. Craven's Newsworld. 5.30 p.m. Here Comes the Double Deckers. 5.40 p.m. The Wombles. 5.45 p.m. 6.00 Nationwide. 6.50 p.m. The Goodies. 7.30 p.m. Angels. 8.10 p.m. Panorama. 9.00 p.m. News. 9.25 p.m. The Monday Film: "The Killers," starring Lee Marvin and Angie Dickinson.

10.55 To-night and every week.

† Indicates programme in black and white

BBC 1

11.30 Weather, Regional News. All Regions as BBC-1 except at the following times: Wales—1.45-2.00 p.m. Pili Pala. 6.00-6.30 Wales To-day. 6.50-7.30 Heddys. 10.55-11.30 p.m. News. 11.30 News and Weather for Wales. Scotland—6.00-6.50 p.m. Reporting Scotland. 10.55-11.30 A Taste of the Orkney Isles. 11.35 Scottish News Summary. Northern Ireland—6.50-6.00 p.m. Northern Ireland News. 6.00-6.50 Scene Around Six. 11.30 Northern Ireland News Headlines. England—6.00-6.50 p.m. Look North (from Leeds, Manchester, Newcastle); Midlands To-day (from Birmingham); Look East (from Norwich); Points West (from Bristol); South To-day (from Southampton); Spotlight South-West (from Plymouth).

(from Southampton); Spotlight South-West (from Plymouth).

BBC 2

7.05-7.45 a.m. Open University. 7.45-8.15 p.m. Open University. 7.30 Newsday. Ludovic Kennedy talks to Golda Meir. 9.10 p.m. High Chaparral. 9.50 p.m. Lord Peter Wimsey. 9.50 p.m. Richard Dimbleby. 10.45 Diversions. 11.30 Newsnight. 11.55 Close-up: Michael Gwynn reads "Don Juan in Town" by Lord Byron.

### LONDON

10.15 a.m. A Big Country. 10.55 "Fourth Square" starring Conrad Phillips. 11.30 Gallop! Gallop! 12.15 p.m. Untamed World. 12.40 Rainbow. 1.00 First Report: News. 1.20 p.m. Lunch-time To-day. 1.30 Gambit. 2.00 Good Afternoon. 2.30 "The Impostor" starring Carrie Snodgrass. 4.15 Cartoon. 4.25 Clapperboard. 4.35 Home's Back. 5.30 And Mother. Makes Five. 6.50 News. From ITN. 6.50 To-day. 7.00 Whodunnit? 7.30 Coronation Street. 8.00 p.m. Son Remon. 8.30 p.m. War in Action. 9.00 The Sweeney. 10.00 News. 10.30 Seven Ages of Fashion. 11.00 The Streets of San Francisco. 11.55 My Song is Freedom. All ITV Regions as London except at the following times:—

### ANGLIA

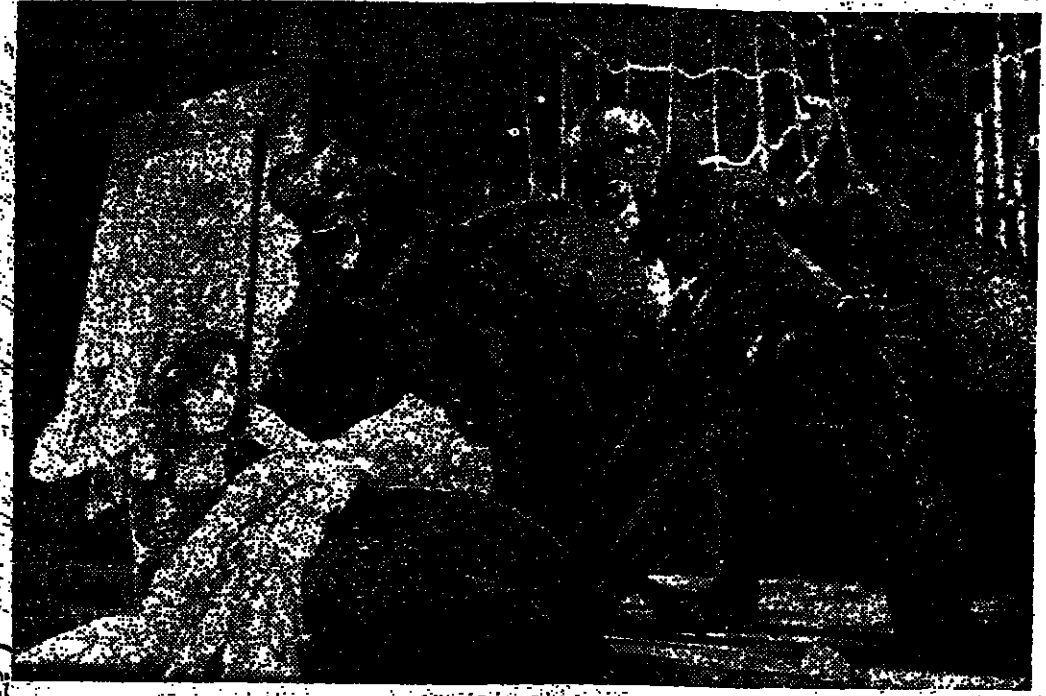
1.25 p.m. Anglia News. 2.00 Homeparty. 2.30 Monday Afternoon Film: "Just For You." 3.30 p.m. The Impostor. 4.15 p.m. Edith Barrymore. 4.25 The Remper Room. 4.30 p.m. The Impostor. 4.35 p.m. Council Interview. 4.40 p.m. Council Interview. 4.45 p.m. Council Interview. 4.50 p.m. Council Interview. 4.55 p.m. Council Interview. 5.00 p.m. Council Interview. 5.05 p.m. Council Interview. 5.10 p.m. Council Interview. 5.15 p.m. Council Interview. 5.20 p.m. Council Interview. 5.25 p.m. Council Interview. 5.30 p.m. Council Interview. 5.35 p.m. Council Interview. 5.40 p.m. Council Interview. 5.45 p.m. Council Interview. 5.50 p.m. Council Interview. 5.55 p.m. Council Interview. 6.00 p.m. Council Interview. 6.05 p.m. Council Interview. 6.10 p.m. Council Interview. 6.15 p.m. Council Interview. 6.20 p.m. Council Interview. 6.25 p.m. Council Interview. 6.30 p.m. Council Interview. 6.35 p.m. Council Interview. 6.40 p.m. Council Interview. 6.45 p.m. Council Interview. 6.50 p.m. Council Interview. 6.55 p.m. Council Interview. 7.00 p.m. Council Interview. 7.05 p.m. Council Interview. 7.10 p.m. Council Interview. 7.15 p.m. Council Interview. 7.20 p.m. Council Interview. 7.25 p.m. Council Interview. 7.30 p.m. Council Interview. 7.35 p.m. Council Interview. 7.40 p.m. Council Interview. 7.45 p.m. Council Interview. 7.50 p.m. Council Interview. 7.55 p.m. Council Interview. 8.00 p.m. Council Interview. 8.05 p.m. Council Interview. 8.10 p.m. Council Interview. 8.15 p.m. Council Interview. 8.20 p.m. Council Interview. 8.25 p.m. Council Interview. 8.30 p.m. Council Interview. 8.35 p.m. Council Interview. 8.40 p.m. Council Interview. 8.45 p.m. Council Interview. 8.50 p.m. Council Interview. 8.55 p.m. Council Interview. 9.00 p.m. Council Interview. 9.05 p.m. Council Interview. 9.10 p.m. Council Interview. 9.15 p.m. Council Interview. 9.20 p.m. Council Interview. 9.25 p.m. Council Interview. 9.30 p.m. Council Interview. 9.35 p.m. Council Interview. 9.40 p.m. Council Interview. 9.45 p.m. Council Interview. 9.50 p.m. Council Interview. 9.55 p.m. Council Interview. 10.00 p.m. Council Interview. 10.05 p.m. Council Interview. 10.10 p.m. Council Interview. 10.15 p.m. Council Interview. 10.20 p.m. Council Interview. 10.25 p.m. Council Interview. 10.30 p.m. Council Interview. 10.35 p.m. Council Interview. 10.40 p.m. Council Interview. 10.45 p.m. Council Interview. 10.50 p.m. Council Interview. 10.55 p.m. Council Interview. 11.00 p.m. Council Interview. 11.05 p.m. Council Interview. 11.10 p.m. Council Interview. 11.15 p.m. Council Interview. 11.20 p.m. Council Interview. 11.25 p.m. Council Interview. 11.30 p.m. Council Interview. 11.35 p.m. Council Interview. 11.40 p.m. Council Interview. 11.45 p.m. Council Interview. 11.50 p.m. Council Interview. 11.55 p.m. Council Interview. 12.00 p.m. Council Interview. 12.05 p.m. Council Interview. 12.10 p.m. Council Interview. 12.15 p.m. Council Interview. 12.20 p.m. Council Interview. 12.25 p.m. Council Interview. 12.30 p.m. Council Interview. 12.35 p.m. Council Interview. 12.40 p.m. Council Interview. 12.45 p.m. Council Interview. 12.50 p.m. Council Interview. 12.55 p.m. Council Interview. 1.00 p.m. Council Interview. 1.05 p.m. Council Interview. 1.10 p.m. Council Interview. 1.15 p.m. Council Interview. 1.20 p.m. Council Interview. 1.25 p.m. Council Interview. 1.30 p.m. Council Interview. 1.35 p.m. Council Interview. 1.40 p.m. Council Interview. 1.45 p.m. Council Interview. 1.50 p.m. Council Interview. 1.55 p.m. Council Interview. 2.00 p.m. Council Interview. 2.05 p.m. Council Interview. 2.10 p.m. Council Interview. 2.15 p.m. Council Interview. 2.20 p.m. Council Interview. 2.25 p.m. Council Interview. 2.30 p.m. Council Interview. 2.35 p.m. Council Interview. 2.40 p.m. Council Interview. 2.45 p.m. Council Interview. 2.50 p.m. Council Interview. 2.55 p.m. Council Interview. 3.00 p.m. Council Interview. 3.05 p.m. Council Interview. 3.10 p.m. Council Interview. 3.15 p.m. Council Interview. 3.20 p.m. Council Interview. 3.25 p.m. Council Interview. 3.30 p.m. Council Interview. 3.35 p.m. Council Interview. 3.40 p.m. Council Interview. 3.45 p.m. Council Interview. 3.50 p.m. Council Interview. 3.55 p.m. Council Interview. 4.00 p.m. Council Interview. 4.05 p.m. Council Interview. 4.10 p.m. Council Interview. 4.15 p.m. Council Interview. 4.20 p.m. Council Interview. 4.25 p.m. Council Interview. 4.30 p.m. Council Interview. 4.35 p.m. Council Interview. 4.40 p.m. Council Interview. 4.45 p.m. Council Interview. 4.50 p.m. Council Interview. 4.55 p.m. Council Interview. 5.00 p.m. Council Interview. 5.05 p.m. Council Interview. 5.10 p.m. Council Interview. 5.15 p.m. Council Interview. 5.20 p.m. Council Interview. 5.25 p.m. Council Interview. 5.30 p.m. Council Interview. 5.35 p.m. Council Interview. 5.40 p.m. Council Interview. 5.45 p.m. Council Interview. 5.50 p.m. Council Interview. 5.55 p.m. Council Interview. 6.00 p.m. Council Interview. 6.05 p.m. Council Interview. 6.10 p.m. Council Interview. 6.15 p.m. Council Interview. 6.20 p.m. Council Interview. 6.25 p.m. Council Interview. 6.30 p.m. Council Interview. 6.35 p.m. Council Interview. 6.40 p.m. Council Interview. 6.45 p.m. Council Interview. 6.50 p.m. Council Interview. 6.55 p.m. Council Interview. 7.00 p.m. Council Interview. 7.05 p.m. Council Interview. 7.10 p.m. Council Interview. 7.15 p.m. Council Interview. 7.20 p.m. Council Interview. 7.25 p.m. Council Interview. 7.30 p.m. Council Interview. 7.35 p.m. Council Interview. 7.40 p.m. Council Interview. 7.45 p.m. Council Interview. 7.50 p.m. Council Interview. 7.55 p.m. Council Interview. 8.00 p.m. Council Interview. 8.05 p.m. Council Interview. 8.10 p.m. Council Interview. 8.15 p.m. Council Interview. 8.20 p.m. Council Interview. 8.25 p.m. Council Interview. 8.30 p.m. Council Interview. 8.35 p.m. Council Interview. 8.40 p.m. Council Interview. 8.45 p.m. Council Interview. 8.50 p.m. Council Interview. 8.55 p.m. Council Interview. 9.00 p.m. Council Interview. 9.05 p.m. Council Interview. 9.10 p.m. Council Interview. 9.15 p.m. Council Interview. 9.20 p.m. Council Interview. 9.25 p.m. Council Interview. 9.30 p.m. Council Interview. 9.35 p.m. Council Interview. 9.40 p.m. Council Interview. 9.45 p.m. Council Interview. 9.50 p.m. Council Interview. 9.55 p.m. Council Interview. 10.00 p.m. Council Interview. 10.05 p.m. Council Interview. 10.10 p.m. Council Interview. 10.15 p.m. Council Interview. 10.20 p.m. Council Interview. 10.25 p.m. Council Interview. 10.30 p.m. Council Interview. 10.35 p.m. Council Interview. 10.40 p.m. Council Interview. 10.45 p.m. Council Interview. 10.50 p.m. Council Interview. 10.55 p.m. Council Interview. 11.00 p.m. Council Interview. 11.05 p.m. Council Interview. 11.10 p.m. Council Interview. 11.15 p.m. Council Interview. 11.20 p.m. Council Interview. 11.25 p.m. Council Interview. 11.30 p.m. Council Interview. 11.35 p.m. Council Interview. 11.40 p.m. Council Interview. 11.45 p.m. Council Interview. 11.50 p.m. Council Interview. 11.55 p.m. Council Interview. 12.00 p.m. Council Interview. 12.05 p.m. Council Interview. 12.10 p.m. Council Interview. 12.15 p.m. Council Interview. 12.20 p.m. Council Interview. 12.25 p.m. Council Interview. 12.30 p.m. Council Interview. 12.35 p.m. Council Interview. 12.40 p.m. Council Interview. 12.45 p.m. Council Interview. 12.50 p.m. Council Interview. 12.55 p.m. Council Interview. 1.00 p.m. Council Interview. 1.05 p.m. Council Interview. 1.10 p.m. Council Interview. 1.15 p.m. Council Interview. 1.20 p.m. Council Interview. 1.25 p.m. Council Interview. 1.30 p.m. Council Interview. 1.35 p.m. Council Interview. 1.40 p.m. Council Interview. 1.45 p.m. Council Interview. 1.50 p.m. Council Interview. 1.55 p.m. Council Interview. 2.00 p.m. Council Interview. 2.05 p.m. Council Interview. 2.10 p.m. Council Interview. 2.15 p.m. Council Interview. 2.20 p.m. Council Interview. 2.25 p.m. Council Interview. 2.30 p.m. Council Interview. 2.35 p.m. Council Interview. 2.40 p.m. Council Interview. 2.45 p.m. Council Interview. 2.50 p.m. Council Interview. 2.55 p.m. Council Interview. 3.00 p.m. Council Interview. 3.05 p.m. Council Interview. 3.10 p.m. Council Interview. 3.15 p.m. Council Interview. 3.20 p.m. Council Interview. 3.25 p.m. Council Interview. 3.30 p.m. Council Interview. 3.35 p.m. Council Interview. 3.40 p.m. Council Interview. 3.45 p.m. Council Interview. 3.50 p.m. Council Interview. 3.55 p.m. Council Interview. 4.00 p.m. Council Interview. 4.05 p.m. Council Interview. 4.10 p.m. Council Interview. 4.15 p.m. Council Interview. 4.20 p.m. Council Interview. 4.25 p.m. Council Interview. 4.30 p.m. Council Interview. 4.35 p.m. Council Interview. 4.40 p.m. Council Interview. 4.45 p.m. Council Interview. 4.50 p.m. Council Interview. 4.55 p.m. Council Interview. 5.00 p.m. Council Interview. 5.05 p.m. Council Interview. 5.10 p.m. Council Interview. 5.15 p.m. Council Interview. 5.20 p.m. Council Interview. 5.



# Alice Cooper

by ANTONY THORNCROFT

Alice Cooper found fame and fortune by dressing as a ghoul, a vampire, a mad scientist, and a variety of other monstrous characters. He has since moved on to a more sophisticated, but still theatrical, style. In his new album, *Love at First Sting*, he shows a more mature side, but still with a touch of the macabre. The album is a mix of hard rock and pop, with some of the best of recent rock songs. Cooper's music is a blend of the old and the new, and it is a pleasure to hear him in a more sophisticated style. The album is a testament to his versatility as an artist, and it is a must-listen for anyone who enjoys rock music.



Alice Cooper at bay

# The Taming of the Shrew

by GARRY O'CONNOR

The Oxford and Cambridge Shakespeare Company, this year directed by Brian Gibbard, is due to tour America later on, after a successful tour of the UK. The production is a masterpiece of theatrical art, with a cast of talented actors and a set that is both beautiful and functional. The story of *The Taming of the Shrew* is a classic, and the production does it justice. The actors are superb, and the music is beautiful. The production is a must-see for anyone who loves theatre.

# Boum!

by B. A. YOUNG

Harry Dennen has made where such a man is called for, and out of a series of French films he has made a masterpiece. The film is a blend of comedy and drama, and it is a pleasure to watch. The cast is superb, and the music is beautiful. The film is a must-see for anyone who loves French cinema.

# Days of Hope

by CHRIS DUNKLEY

Director Ken Loach and producer Tony Garnett returned to television last Thursday with the first of a new series of films, *Days of Hope*. The film is a masterpiece of television art, with a cast of talented actors and a set that is both beautiful and functional. The story of *Days of Hope* is a classic, and the production does it justice. The actors are superb, and the music is beautiful. The film is a must-see for anyone who loves television.

# Usher Hall, Edinburgh

# French National Orchestra

by RONALD CRICHTON

Leonard Bernstein's concert on Friday (repeated the following evening) was a festival of the glorious kind. The French National Orchestra, under the baton of Bernstein, gave a performance that was both beautiful and powerful. The music was a blend of the old and the new, and it was a pleasure to hear it. The orchestra is a testament to the skill and talent of its members, and it is a must-listen for anyone who loves classical music.

# Albert Hall/Radio 3

# Poppea

by GILLIAN WIDDICOMBE

The BBC's opera Proms are usually best heard in the hall, and this was no exception. The performance of *Poppea* was a masterpiece of theatrical art, with a cast of talented actors and a set that is both beautiful and functional. The story of *Poppea* is a classic, and the production does it justice. The actors are superb, and the music is beautiful. The production is a must-see for anyone who loves opera.

# Gaumont, Southampton

# Wings

by ANTONY THORNCROFT

Paul McCartney's road show, *Wings*, was given a rousing reception at Gaumont, Southampton. The performance was a masterpiece of musical art, with a cast of talented musicians and a set that is both beautiful and functional. The music was a blend of the old and the new, and it was a pleasure to hear it. The band is a testament to the skill and talent of its members, and it is a must-listen for anyone who loves rock music.

# Watford Palace

# Irma la Douce

BY MICHAEL COVENEY

It is salutary to recall that this innocuously dated musical, now so popular around our repertoire theatres and currently opening the new season at the Watford Palace, was first produced in London, in 1955, by Peter Brook. I imagine that Mr. Brook must have made something of two features of the show that are noticeably underplayed in this production by Duggie Squires. They are the classical French farce formula at the root of the show; and the ironic melodrama of the court room conviction of Irma's lover for the murder of a character who is merely himself in disguise.

# The Entertainment Guide is on Page 8

a dancer. Miss Stubbs walks, talks and sings like a dancer; the eyes twinkle consistently; her back is held in an exemplary arch throughout. And she explodes like a firecracker when her big number, "Disc-Donc" comes along. She is excellently supported both by Mr. Squires' choreography and by the male dance troupe. Marguerite Monnot's score has not exactly survived the passing years. But it does remain an occasionally plaintive reminder of the old-fashioned idea people used to have of Paris as a lovers' nest. The band is, needless to say, supplemented with an accordion; the underground world of Irma's pimps and lovable thugs is hard by the Bridge of Caulaincourt whose effect is to turn lovers entirely soppy before they jump off. When Irma's lover and the others escape from Devil's Island, they return to Paris on a boat that almost matches the book for slowness. But there we are; for many, the show will no doubt provide an agreeable evening's entertainment. Ooh-la-la!

# 'A Family and a Fortune' to end

A Family and a Fortune, starring Margaret Leighton and Alec Guinness, is to close at the Apollo on October 4 when the company's contracts come to an end. Alec Guinness leaves immediately for Hollywood to appear in a new film *Murder by Death*, with Truman Capote.

# Quick. Think of a Scotch Whisky that slips down smoothly.



HERE ARE A COUPLE OF CLUES.



AEUE moderates are threatening High Court action unless to-morrow's weekly executive meeting decides to allow the action for the Manchester and West Midlands executive next month on schedule next month. Last week, the executive, on the casting vote of Mr. Hugh Stanger, decided to allow that the postal balloting process should start afresh — which in

# BL workers may call off strike plan

Many AUEW stewards feel that with the Government standing firm on the application of the pay limit, they would prefer a clear lead from their union before going ahead with a challenge to the anti-inflation

## Chrysler ready for talks on worker participation

The reverse side of the coin is the acceptance of central bargaining. Almost all employees have now been brought to the same contract starting date of July 1. But the thought of a

## Farm machine exports near record

BRITAIN'S agricultural engineering industry expects to achieve an export record this year of £20m, and maintain its position as second in the "league" table of exporters on a balance-of-payments basis.

The value of exports by the industry in the first seven months of this year rose by 50 per cent.

compared with the same period of 1974 to £367.1m., and imports of agricultural machinery expanded by 38 per cent. to £107m.

The industry, therefore, achieved a £250m. favourable balance of trade—a 71 per cent. improvement on the same period of last year.

## Enka reorganisation plan soon

A main point made by the unions was that after studying further information supplied by both Enka and Akzo, they were still unable to ascertain to acceptable levels since 1970, the necessary internal as well as external investment programmes were in danger, with the consequent threat of massive redundancies.

## Row over convener on Board

my directorship. I chose to stay a director because that is union policy. It wants worker participation at Board level and this was a major step in the right direction." He had waived a director's fee of £1,000 a year so that nobody could accuse him of receiving a pay-off.

## Union fears collapse of pay policy

was given full backing over the McGarvey added.

# Blastfurnace brinkmanship

## Showdown

## Showdown

will require fewer blastfurnace-men than the present furnaces, and considerable changes in the grading structure, but BSC

## More danger

says that work on the new fur- be

## Differentials

BSC therefore fears that by giving in at Llanwern it will not only open the door for similar pay demands by blastfurnacemen each time a modern furnace is introduced, but that it will be faced by industry-wide clamouring for a costly restoration of differentials.

## Relining

In addition, the corporation says that it badly needs the furnace, which could start producing iron early in November. If commissioning went because of trouble with the existing furnaces. One of the out of operation for relatively the moment, and the other bad need of relining.



Mr. Hector Smith, NUR general secretary: BSC seeks a confrontation.

## 'Cash in the sky'

money in the sky" in the present state of the industry. Moreover, the blastfurnace men argue BSC's pay proposals

**KREDITANSTALT FÜR WIEDERAUFBAU**  
**FRANKFURT / MAIN, GERMANY**

BALANCE SHEET AS AT 31st DECEMBER 1974				
LIABILITIES			ASSETS	
	DM	DM	DM	DM
1. Banking liabilities				
a) to credit institutions		1,856,862,263.40		73,885.67
b) to the Federal Republic of Germany		8,351,401,855.15		187,482,536.19
c) to Federal lands		106,775,928.92		464,358.28
d) to other lenders		1,153,778,318.71		
of which: funds borrowed with an agreed term or period of notice of				
a) less than three months	74,736,267.36			
b) not less than three months but less than four years	1,502,940,828.02			
c) four years or more	9,821,262,260.80			
of which: due within less than four years DM1,543,886,302.13				
2. Promissory notes in circulation				450,000,000.00
3. Bonds issued				
a) bonded loans	2,281,987,940.00			
b) medium-term notes	1,410,000,000.00			
c) registered bonds	24,500,000.00			
d) bonds drawn or called up for redemption	22,074,841.00	3,738,572,381.00		
of which: due or redeemable within less than four years DM2,074,672,581.00				
4. Interest on bonds issued and on funds borrowed with an agreed term or period of notice of four years or more				
a) accrued interest	168,622,104.10			
b) interest due incl. interest due on 2nd January 1975	128,890,082.12	294,802,186.22		
5. Transmitted loans and other transactions on a trust basis				
a) transmitted loans in Kreditanstalt's own name		13,298,627,351.99		
b) loans on behalf of third parties	84,260,925.76			
6. Reserves for special purposes				
a) for pension payments	50,503,730.00			
b) others	1,194,081.23	51,697,811.23		
7. Other liabilities				
a) deferred items		889,484.93		
b) capital		83,946,516.88		
8. Capital				1,000,000,000.00
9. Published reserves				
a) statutory reserves	125,000,000.00			
b) reserves formed from resources of the E.R.P. Special Fund	255,822,918.50			
c) special reserve	464,143,122.01	848,966,038.51		
11. Contingent liabilities in respect of guarantees and of negotiated bills	225,906,298.14			
		31,263,121,296.95		
				31,263,121,296.95
PROFIT AND LOSS ACCOUNT FOR 1974				
EXPENSES			RECEIPTS	
	DM		DM	
1. Interest and similar expenses	840,661,919.53			855,569,339.41
2. Contractual allocation of interest to reserves from resources of the E.R.P. Special Fund	9,182,930.50			
3. Commissions and similar expenses in respect of service transactions	799,885.23			
4. Depreciation and adjustments on claims and securities as well as allocation to reserves for possible loan losses	6,253,617.24			
5. Wages and salaries	27,204,631.08			
6. Social security contributions	2,684,469.41			
7. Expenses on retirement pensions and other benefits	11,081,168.90			
8. Material expenses on the banking business	10,752,807.41			
9. Depreciation and adjustments on real estate and buildings as well as on office furniture and equipment	675,902.56			
10. Other expenses	1,499,448.98			
11. Net profit for 1974 (allocated to special reserves)	39,097,591.44			
	949,793,552.27			949,793,552.27

Frankfurt/Main, 4th March 1975

هكذا من الأصل

Bomb blast

asserts his



## Denktash UDI threat for North Cyprus

By Metin Munk

ANKARA, Sept. 14. TURKISH-CYPRIO leader Rauf Denktaş, has threatened here to declare Northern Cyprus independent after his New York peace talks with Greek-Cypriot negotiator Glafcos Clerides ended in deadlock.

Mr. Denktaş will return to Nicosia on Wednesday and ask the Turkish Constituent Assembly to give him authority to declare independence. He has set two conditions which, if fulfilled, however, could "prevent a Turkish-Cypriot unilateral declaration."

First, the Greek-Cypriots must quickly return to the negotiating table and stay there. Second, the U.N. must accord him equal rights with President Makarios to address the General Assembly during the forthcoming debate on Cyprus.

The Greek-Cypriot Government decided to refer the Cyprus problem to the U.N. General Assembly after the peace talks reached an impasse.

It is unlikely either of Mr. Denktaş's conditions will be fulfilled or that he will change his mind about turning the north, which constitutes 35 per cent of the island, into a separate State.

Mr. Denktaş met the Turkish Prime Minister, Mr. Süleyman Demirel, yesterday and discussed developments with him. He brought his independence proposal before Mr. Demirel saying: "Independence is the only way out." No Turkish Government announcement was made after the meeting.

A senior Turkish Foreign Ministry official said today however, that Turkey would not oppose a decision by the Turkish-Cypriot National Assembly to endorse Mr. Denktaş's plan for independence.

Sources close to Mr. Denktaş maintain the Turkish-Cypriot leader is not bluffing.

## Power struggle will follow Rhodesia Nationalist split

BY OUR OWN CORRESPONDENT

SALISBURY, Sept. 14.

TWO ENTIRELY separate Black political movements have emerged in Rhodesia, leaving open the vital question of which will retain the power of the African National Council (ANC) to negotiate with the Government of Mr. Ian Smith on behalf of the country's Black majority.

The ANC has finally split into two, and the division was admitted by the organisation's Secretary-General, Dr. Gordon Chavunduka. In a statement authorised by ANC president Bishop Abel Muzorewa he said there was room in Rhodesia for two Black political parties, and he referred to the faction led by Mr. Joshua Nkomo as "those who have broken away" from the ANC.

To-day both parties continued to claim to represent the ANC and pursued their propaganda campaigns aimed at proving their opponents to be nothing more than splinter groups. But the Council has clearly split into two nationalist factions that clashed in bloody riots throughout Rhodesia in the early 1960s. Mr. Nkomo's Zimbabwe African People's Union (ZAPU) and the followers of the Rev. Ndabaningi Sithole, former leader of the Zimbabwe African National Union (ZANU) and now leader of the Lusaka-based Eastern Wing of the ANC.

After spending more than 10

years in detention, both leaders were released last year under the Lusaka agreement that merged their former parties in an attempt to present a united Black leadership to negotiate a settlement with the Government.

Political observers in Salisbury believe it will be almost impossible to heal the new split, and Zambian President Kaunda and other Black leaders now have to face the decision over which group they will back in resumed contacts with Mr. Smith.

The External Wing of the ANC has the support of Bishop Muzorewa, but the ANC President has come under mounting criticism during recent weeks for his continued absence from Rhodesia.

Mr. Nkomo appears to have the strong grass-roots support among the Council's widely-scattered provincial branches, and he has a clear majority of supporters within the 70-member National Executive. His main advantage is that he is operating inside Rhodesia, but in the wider context of Southern African detente he is a lone figure ranged against the powerful Lusaka group of Bishop Muzorewa, the Rev. Sithole, and Mr. James Chikereka.

More Overseas News  
Page 8

## Sra. Peron pledges comeback

BUENOS AIRES, Sept. 14.

ARGENTINE President María Estela Peron, her country nearly bankrupt and ravaged by political crises, began a holiday to-day after tearfully handing over executive power to Senate Speaker Sr. Isale Luder.

Senator Luder, aged 58, took over as interim President last night during a ceremony in Government House here. The 44-year-old Sra. Peron, looking thin and strained, smiled tearfully as she told specially invited guests and a nationwide television audience: "This is nothing more than a temporary farewell so that I can rest, because this year has been very hard."

Speculation persisted, however, that the widow-president would decide to step down permanently, although semi-official sources have said she plans to return to the capital on October 16.

Foreign Minister Angel Roldán told leaders of the ruling Justicialist Liberation Front (Frejuli) on Friday: "If she does decide to resign, it will be her own decision based on advice from her doctors." And yesterday the President said that any actions Senator Luder took in her absence would have her full support, indicating he was expected to be more than a caretaker President.

REITER

## VENEZUELA TO INVEST \$7BN.

By Joseph Mann

CARACAS, Sept. 14. THE VENEZUELAN Government will invest more than \$7bn. over the next four years in steel, hydroelectric and aluminium manufacturing projects in the country's mineral-rich Guayana region, it was announced last night after a special Cabinet meeting.

The British delegation is to be led by Assistant Under-Secretary at the Foreign Office Mr. Donald Hawley. The talks represent the first round of meetings arranged by Mr. Callaghan, Foreign Secretary, on his visit to Uganda in July over the Hills affair.

Although Anglo-Ugandan trade is expected to be discussed, it is understood General Amin's request for military assistance will not be raised.

## Anglo-Uganda talks to begin

By Bridget Bloom, Africa Correspondent

TALKS between British and Ugandan officials on "outstanding issues" between the two countries are to begin in Kampala this week, according to the Foreign Office.

The principal issue is expected to be Ugandan compensation for companies affected by nationalisation, and individuals, like Ugandan Asians, whose assets have been confiscated or otherwise forfeited.

The British delegation is to be led by Assistant Under-Secretary at the Foreign Office Mr. Donald Hawley. The talks represent the first round of meetings arranged by Mr. Callaghan, Foreign Secretary, on his visit to Uganda in July over the Hills affair.

Although Anglo-Ugandan trade is expected to be discussed, it is understood General Amin's request for military assistance will not be raised.

## Angola town capture disputed

LUANDA, Sept. 14.

FORCES of the Popular Movement for the Liberation of Angola (MPLA) yesterday defeated troops of rival liberation movements in several clashes, MPLA's Political Commissariat said today.

A communiqué said the MPLA routed forces of the National Union for the Total Independence of Angola (UNITA) and was in control of the eastern town of Luso.

In the north, shooting broke out between the MPLA and the

National Front for the Liberation of Angola (FNLA) near the town of Duque de Bragança, 250 miles east of here. The FNLA forces were reported to have withdrawn.

But in Lusaka an official of UNITA said its forces had recaptured the town of Luso. UNITA Foreign Secretary George Sangumba said the movement's President, Dr. Jonas Savimbi, would fly to Luso from here tomorrow with a party of foreign correspondents.

REITER

## 107 nations 'break UN rights code'

By Kevin Rafferty

MORE THAN 100 countries throughout the world are breaking the United Nations Declaration on Human Rights by imprisoning people for their beliefs, saying them speedy trial, and sometimes torturing or executing them, according to Amnesty International. In its annual report Amnesty lists 107 countries which are defying the human rights Declaration, yet most of them are members of the UN, and thus bound by it.

Mr. Dietrich Borner, Chairman of the organisation's International Executive Committee, says in his report: "Far too many nations of the world pay only lip service to human rights, limiting them to those elements that are unquestioning in their obedience to the central authority and to the ruling political system. By doing so they corruptly downgrade human rights into privileges."

He reports that in the past there have been mass releases of political prisoners in a number of countries, notably Greece, Cambodia, Portugal and South Africa. But Mr. Borner lists a larger number of other countries—Argentina, Brazil, Guatemala, Indonesia, Iran, Iraq, Morocco, South Africa, South Korea, Spain, the Soviet Union, and Uruguay—where violations of human rights occur on a disturbing scale.

## NO REPLY FROM CHAD REBELS

By Robert Mauthner

PARIS, Sept. 14. THE FRENCH Government, which last Friday offered to pay ransom of Frs. 10m. (about £1.5m.) to rebels in the north of Chad to obtain the release of ne. François Tomba, a French archaeologist, has still had a reply from the Touareg leader, Hissène Habré.

## Belgian recovery likely early next year

By Robert Mauthner

PARIS, Sept. 14.

BELGIUM's economic recovery, as in other Western European countries, is expected to be delayed until early 1976, according to the latest survey of the Belgium-Luxembourg Economic Union, increases.

As a result, Belgium's upward movement of prices which used to be less rapid than the average for the OECD area as a whole, is now faster.

The OECD Secretariat considers it desirable to introduce a certain amount of flexibility into the Belgian indexation system so that it could be applied differently according to the various causes of inflation.

Since the trade unions will not agree to any limitation of wage indexation unless they are guaranteed various benefits in return, the Government should go ahead with the negotiations it has already embarked on with management and unions on new tax scales.

The report is reserved in its estimates of export growth—no more than 1 per cent in real terms in 1975, rising to 4.5 per cent next year. But it still expects the balance on current account to show a substantial surplus this year, mainly because of a sharp fall in imports.

While GNP will probably stagnate in 1975, it is forecast to rise by about 2 per cent in real terms next year.

Unemployment, running at more than 8 per cent in mid-summer, is expected to continue rising throughout the year.

Assuming a slight upturn of activity at the beginning of 1976, the OECD considers unemployment might continue to increase during most of next year, though much less rapidly than in 1975.

The 1975 inflation rate is expected to be much the same as last year—about 12 per cent. But this marks a slowdown in the rate of price increases throughout the year from an annual 15 per cent in the first quarter to about 10 per cent in the last quarter.

The OECD report emphasises that the sliding-scale mechanism, under which prices are quickly passed on to wages, has proved a mixed blessing in Belgium.

## Bomb blasts in Corsica

AJACCIO, Sept. 14.

GROUPS OF demonstrators clashed with police to-day when they attacked the Prefecture building after a rally protesting against France's rule over Corsica.

An estimated 200 nationalist youths pelted the building with stones and bottles after the crowd dispersed quietly after protest meeting demanding the withdrawal of French forces, the French Government, waving liberation of jailed nationalists, white Corsican flags and singing and talks on a new status for the Mediterranean island.

The demonstrators set fire to a bank office and ransacked a planned demonstration began. The blasts damaged the Town Hall and the Mayor's home.

Riot police, kept in readiness in the distance during the meeting and march, drove the attackers away with volleys of tear gas grenades and threw a protective ring round the Prefecture building.

The bulk of the 5,000-strong crowd dispersed quietly after protesting and shouting denouncing the French Government, waving liberation of jailed nationalists, white Corsican flags and singing and talks on a new status for the Mediterranean island.

Earlier two bombs exploded outside Ajaccio, hours before the planned demonstration began. The blasts damaged the Town Hall and the Mayor's home.

The demonstrators set fire to a bank office and ransacked a planned demonstration began. The blasts damaged the Town Hall and the Mayor's home.

The demonstrators set fire to a bank office and ransacked a planned demonstration began. The blasts damaged the Town Hall and the Mayor's home.

## Pinochet asserts his power

By Alejandro Koffman O'Reilly

SANTIAGO, Sept. 14.

ILEAN President General Augusto Pinochet will later this week issue a decree confirming himself as sole chief executive officer.

The three other members of the military junta—the Commander-in-Chief of the Navy, General Carlos Prats, and the Commander of the Carabineros (Police)—will take over legislative power, in charge of drafting a new constitution.

The General announced the change after celebrations of the one anniversary of the military coup that overthrew Salvador Allende's Popular Unity Coalition.

Gen. Pinochet is now seemingly prepared to direct political moves with former Christian Democrat President Eduardo Frei, whom he invited, withers, to be a member of a State Council—an advisory body to Presidency.

Last week, the junta freed 12 members of the Allende administration, including former ministers Carlos Matos, Pedro Orlondo Cantuarias, besides others recently detained in ofagans—a former Christian Democrat Deputy among them. Gen. Pinochet does not seem

willing to grant further concessions to politicians.

A general amnesty will not be given and the curfew will stay. "Communism has a timeless strategy, and so do I."

Civilian control measures would be maintained at a lesser intensity and he would free most political prisoners "if the case of missing people."

He blamed "international Marxism" for bringing up the case of missing people. "We wouldn't have been so naive as doing so would give them entry to bring it up ourselves if we had killed them," Gen. Pinochet suggested.

In London the British Foreign Office welcomed the news of the release of further political detainees—but added: "The British Government has already made considerable efforts on behalf of Chilean refugees."

About 2,000 have been granted permission to enter the United Kingdom; some 1,100 have done so. Applications from others are still under consideration.

It is still open to other persons who have been in detention in Chile to apply to come here. It remains, of course, the hope of the British Government that the Chilean Government will release all its political prisoners unconditionally.

The Foreign Office has already made considerable efforts on behalf of Chilean refugees.

## Don't leave your air-conditioning plans until your best people leave you.



It's much easier and more efficient to change the air in your premises than to cope with constantly-changing staff.

It could also be cheaper. A modern air conditioning system can provide really comfortable working conditions for under 3% of total staff costs. Conditions that help to cut staff turnover and all the costly problems of recruitment.

The clean, fresh, air conditioned atmosphere helps people to devote more of their energy to their work. There's less fatigue, less irritation, more concentration, more productivity.

And when combined with heat recovery, air conditioning can re-use the heat created inside the building—by lights, machines and people.

It all adds up to more efficient use of energy resources. Electrical, and human. Put air conditioning high on your priorities. For free information and advice on equipment and cost, contact Bernard Hough.

The Air Conditioning Advisory Bureau, 2 Charing Cross, SW1A 2DR. Telephone: 01-839-7182.



THE ELECTRICITY COUNCIL, ENGLAND & WALES



# Lighting the way ahead

To restore the balance the company embarked two years ago on a research centre designed specifically for work on light fittings. It was to bring together multi-disciplinary work scattered throughout the large manufacturing site at Enfield, and provide facilities Tony Willoughby believes are probably unequalled anywhere in the world.



An astonishing diversity of technical problems is thrown up by lighting. The illumination of a sports stadium for a row of admissions calls for light levels twice as high as the average office, of a precise colour and a uniformity throughout that might be hard to achieve even in an office. The lights that define a runway must be powerful enough to be visible to an approaching aircraft some miles distant, strong enough not to crush under a jumbo-jet's wheel, cool enough not to damage the tyre should an aircraft pause with its wheel on a light, and simple enough for the lamp to be changed quickly.

No less troublesome to solve sometimes can be such problems as how to make floodlights for use at ground level resist

Willoughby has set two main targets for his new research centre. One is to improve the efficiency of the lamp and its fittings. His immediate goal is to increase efficiency from around 50 to 80 per cent, as a contribution to an energy-saving. The other is to utilise the heat as well as the light given out by the lamp, for example by dragging air over the lamp, so warming it (and, incidentally, keeping the light

tant to vandals, safe for inquisitive children's fingers, and proof against any unauthorised tampering (such as the drying of clothes by valets in the Embankment in London). And Thorn has had its embarrassing moments, such as when a new motorway lighting column proved so whippy in the wind that controls atop the poles misbehaved.

The diversity of lamp fitting problems dictated the unique features of the new research centre, such as a floor 18 feet high (a portion of which provides 30 feet of headroom) for the testing of very tall fittings. It dictated the fact that the steel-grey laboratory boasts very few windows, so that daylight is easily excluded from experiments.

As director of research and engineering, Tony Willoughby is responsible for a research and development effort costing about £2.4m. this year, now divided about equally between light source work mainly concentrated at Leicester and light

But the net increases—calculating tax in relation to a married man with two children under 11—are entirely inconsistent, erosion being greatest at the top, but with the bottom end of the scale being worse off than the middle bands.



reducing it to a 7.1 per cent net gain from £9,757 to £10,450.

In attempting to illustrate the erosive effects of inflation on the basis of the Retail Price Index, Movements, and tax, the ILSR produces the following table. With a 105 per cent salary rise from £2,000 to £4,100 in the six years to July 1975 has meant a real earnings decline of 4.4 per cent. £1.3 per cent increase from £9,000 to £14,500 has in real

Commenting on factors which it feels everyone involved in salary management should take account of, the ILSR suggests that the crucial aspect of the present incomes policy is that it implicitly emphasises the need for salary management to be integrated with the general management of an organisation. Thus, salary management can no longer be thought of as isolated and separate admin-

Other moves should be assessment of the undersling of line managers, a salary policy and practices necessary re-training, an review of the appropriat of existing systems and re particularly for performan view and measurement.

Whatever the conditions July, 1976, "the critical for the future is to he salary structure which integrity from top to b so that pay decisions a justified to Government- holders, management, u and individual salaried ployees," the report main

## BY DR. DAVID CARRICK

Then problem number two cropped up. Why should the so-called "maturity-onset" diabetes be largely controllable by diet (and nowadays by drugs such as tolbutamide) and not insulin? Evidently there must



A major factor in the uric acid onset cases is over and excessive consumption of carbohydrates; and for people, a reasonable diet if necessary, to hold the disorder at bay.

Finally, I must mention condition that causes pain in insurance and other important medicals. Some people have a low renal threshold for uric acid—rather like cisterns which overflow set too low—so that passed into the urine by blood—uric acid remains normal has several names, but the most poetic and descriptive is *diabetes insipidus*.

If you would like to know how to cut absenteeism, create greater efficiency and productivity, make your staff happier and do it all for less than 1¢ per employee per day, then simply complete the coupon.

Flextime® is the registered trade mark of Hangster Flextime - the company that introduced flexible working hours to the world.

MAIL THIS COUPON NOW

Processing Machine Ltd Leasing Machine Now  
2-255 7th Street, Waterloo Cross, N. York  
Tel: Waterloo Cross 20165 Telex: 201270

NAME \_\_\_\_\_  
ADDRESS \_\_\_\_\_  
TEL \_\_\_\_\_  
POSITION \_\_\_\_\_

(ET/17)

**We build  
one kind of plant with  
another kind in mind.**

**Lurgi builds industrial plants. Just about every type there is and just about every size. In just about every country in the world. But before we build, we plan. We'll design your plant to be as cost-effective as we can make it. We'll make sure you've got the shortest transport routes. We'll make sure you've got the optimum flow of materials and energy. And we'll make sure that the one thing you haven't got is pollution.**

# MIRCI

**...the plants are  
built by Lurgi**

D-5 Frankfurt (Main), Federal Republic of Germany, Cerdinustreasse 17/2, P.O.B. 1001  
Amsterdam - Bruxelles - Johannesburg - London - Madrid - Melbourne - Mexico D.F. - Milano  
New Delhi - New York - Paris - Rio de Janeiro - Stockholm - Tokyo - Toronto - Wien - Zürich

Lurgi is an engineering group. Lurgi Apparate-Technik GmbH: Dust collection, "Chemotank" environmental protection, activated carbon, "Dampfzink" (special separation technology), pulp technology, "Goth" (surface coating). Lurgi Chemie und Hüttenwerke GmbH: Inorganic chemistry, ferrous metallurgy, non-ferrous metallurgy. Lurgi Maschinenbau GmbH: Refinery design, coal technology, and technology, petrochemistry, other technology.



## Stock Exchange computer plan has new setback

BY DAVID BELL

THE Stock Exchange's new computerised system of settling accounts, which is expected to cost more than £10m, by the time it comes into operation, has suffered a further setback.

The first stage of the scheme—the computerised checking of deals between brokers and jobbers—is working well, but the start of the second stage, a new method of bargain accounting, is being delayed for three or four months.

The Stock Exchange said the delay was due to problems with the computer programme and with integrating the exchange computer and the computers of member firms.

Bargain accounting extends the present system of settle-

ment on a broker to broker basis, using the computer data provided by the checking system as a base.

Both stages of the project—which has so far cost about £4m—are an essential preliminary to the much more ambitious Tallman scheme, which will enable stockbrokers and jobbers to operate on the same flexible basis as they use now to deal in gilt-edged stocks and greatly simplify dealings with company Registrars.

The delay in starting bargain accounting will inevitably put back the introduction of Tallman, which was originally expected to be operational in

London by the end of next year.

A report by McKinsey and Company, the management consultants, last December recommended that the exchange should press on with Tallman, even though at that time the level of bargains was very low—much lower than it is now.

While it is now accepted that the savings from Tallman may be lower than the £2m estimate made when the scheme began in 1972, its cost has been rising steadily.

Last June this was put at £5m, but the most conservative estimate now puts the cost at above £10m, with others ranging up to £15m.

## Wage and cost link 'would slow rate of inflation'

BY OUR ECONOMICS STAFF

THE INDEXATION of wages and contracts to changes in the cost of living would make it easier to slow down the rate of inflation, according to a new analysis published this morning by the Institute of Economic Affairs.

Economists Mr. Richard Jackson and Mr. Kurt Klappholz say the popular belief that indexation would make people more tolerant of inflation is erroneous.

They argue that a key aim of indexation is to prevent expectations of inflation from influencing wage settlements by building the inflation rate of the past into new collective agreements. "The objective is to make expectations of inflation irrelevant to wage settlements, while protecting workers against subsequent inflation."

Indexation of contracts "would protect both parties against the effects of changes in the value of

money, which may otherwise bring about redistributions of income and wealth. Thus indexation would eliminate some effects of inflation generally regarded as most undesirable."

If governments refused to protect their citizens from inflation via indexation, "then at best they must be judged ill-informed, and at worst, the integrity of their protestations must be questioned."

Indexation "might well be acceptable," the report states, if it could reduce substantial employment costs involved in slowing down inflation.

"Since indexation would neutralise most of the effects of inflation, why should it not be politically easier to introduce indexation than to stop inflation?"

"Taming the Tiger, Richard Jackson and Kurt Klappholz, Hobart Papers 63, The Institute of Economic Affairs."

## Employers warned of 'interview prejudice'

Financial Times Reporter

EMPLOYERS should be aware of their own prejudices when interviewing people for jobs and also should not submit candidates to an interrogation, say the authors of a British Institute of Management booklet, How to Interview, published today.

The authors are two consultant psychologists—D. Mackenzie Davy and Patricia McDonnell—who specialise in the assessment of managers and training in selection methods, interviewing and the use of tests.

"To invite someone to talk, then sit back and listen may sound easy, but it often needs a conscious effort not to interrupt, not to offer one's own opinions, not to make an instant judgment about the person and then look only for evidence which supports this judgment."

"Next time you decide in an interview that you 'don't like' someone, try to examine afterwards just why you decided this."

An interviewer's main object should be to get as much information as he can about the applicant's life to date and his circumstances.

"In selecting people for particular jobs it is relatively easy to judge whether candidates have the necessary technical qualifications or the right practical experience. It is much less easy to assess what sort of people they are or how suitable they will be in other ways."

## Co-op Bank aid for Northern Clubs' brewery

BY KENNETH GOODING, INDUSTRIAL CORRESPONDENT

THE CO-OPERATIVE Bank is putting up a substantial part of the £10m. required for a new brewery—one of Britain's biggest—to be built near Newcastle.

The brewery is to be built for the Northern Clubs' Federation, a company owned by the 650 clubs which it supplies with beer.

The NCF has been unable to obtain permission to expand its existing brewery near Newcastle.

Up to 22 per cent of the £10m. cost of buildings and equipment could be offset by Government grants, because the project is in a development area. The scheme would also attract regional employment premiums.

The federation will also be able to sell its existing brewery, but so far is unwilling to give a firm estimate on what it might fetch.

The NCF's brewing capacity will be dramatically increased by the scheme, because the existing brewery can roll out only 250,000 barrels a year. The increased capacity is necessary "because clubs in other parts of the country want our beer," the federation said.

There will be no change in the style of beer produced, which is the same as that first made when the old brewery was set up in 1919. Some of this beer is sold in "keg" form and the NCF plans to introduce its own larger brand.

Outside the North, the brewery includes the bars in the House of Commons among its regular customers.

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

It was natural that the NCF should turn to the Co-operative Bank for help with finance for the scheme, because the bank is already heavily involved in the working-men's club movement.

It is estimated that more than a third of Britain's membership clubs bank with the Co-op.

The planned capacity for the brewery is 2m. bulk barrels a year (or 576m. pints) and outline planning permission has been obtained for a 30-acre site—already bought for between

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

It was natural that the NCF should turn to the Co-operative Bank for help with finance for the scheme, because the bank is already heavily involved in the working-men's club movement.

It is estimated that more than a third of Britain's membership clubs bank with the Co-op.

The planned capacity for the brewery is 2m. bulk barrels a year (or 576m. pints) and outline planning permission has been obtained for a 30-acre site—already bought for between

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

It was natural that the NCF should turn to the Co-operative Bank for help with finance for the scheme, because the bank is already heavily involved in the working-men's club movement.

It is estimated that more than a third of Britain's membership clubs bank with the Co-op.

The planned capacity for the brewery is 2m. bulk barrels a year (or 576m. pints) and outline planning permission has been obtained for a 30-acre site—already bought for between

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

It was natural that the NCF should turn to the Co-operative Bank for help with finance for the scheme, because the bank is already heavily involved in the working-men's club movement.

It is estimated that more than a third of Britain's membership clubs bank with the Co-op.

The planned capacity for the brewery is 2m. bulk barrels a year (or 576m. pints) and outline planning permission has been obtained for a 30-acre site—already bought for between

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

It was natural that the NCF should turn to the Co-operative Bank for help with finance for the scheme, because the bank is already heavily involved in the working-men's club movement.

It is estimated that more than a third of Britain's membership clubs bank with the Co-op.

The planned capacity for the brewery is 2m. bulk barrels a year (or 576m. pints) and outline planning permission has been obtained for a 30-acre site—already bought for between

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

It was natural that the NCF should turn to the Co-operative Bank for help with finance for the scheme, because the bank is already heavily involved in the working-men's club movement.

It is estimated that more than a third of Britain's membership clubs bank with the Co-op.

The planned capacity for the brewery is 2m. bulk barrels a year (or 576m. pints) and outline planning permission has been obtained for a 30-acre site—already bought for between

£250,000 and £300,000—on the

Central Station, in Forth Street, and has opted for a new plant instead.

## Reject Benn policies — Howe

BY PHILIP RAWSTORNE

SIR GEOFFREY HOWE, Tory Shadow Chancellor, yesterday called on Labour moderates to reject Mr. Anthony Wedgwood Benn and his policies and set about the task of implementing a "common-sense programme" of economic reconstruction.

Mr. Benn's proposals for major extensions of public ownership and investment would be wholly destructive, Sir Geoffrey said in a letter to his constituents.

But many of the Energy Secretary's colleagues still appeared to recognise the overwhelming need for prosperous and profitable private industry.

"How much longer can he and his colleagues continue to surround the same Cabinet table?"

"For how much longer will the so-called moderates in the Labour Party continue to submit to the dictates of the 'privileged and powerful minority' who would join Mr. Benn in calling the tune?"

The moderates should "part company" with Mr. Benn and tackle the country's economic

problems by cutting public expenditure, abandoning further nationalisation and restoring industry's profitability.

Speaking at Nottingham on Saturday, Sir Geoffrey advocated a cut in the top rates of income tax to halt the "fame drain."

Britain would be better off if pop stars, such as Mick Jagger and Rod Stewart, were not forced to emigrate to avoid "punitive" tax.

"Tax forgone on the earnings of the 'fame drain' alone was probably greater than the total revenue we obtained from punitive taxes which drove them away. Moreover, they are only the tip of the iceberg... there are countless managers, surgeons, architects and others about whom we hear nothing."

Mr. Reginald Maudling's resignation as Tory Shadow Foreign Secretary was demanded yesterday by the Young Conservatives' chairman, Mr. Tony Kerpel, who accused him of "dumb inaction" over Portugal.

Mr. Kerpel said at Bristol that the Labour Government had given positive support to Portuguese socialists and Mrs.

## Fuel claim 'over-optimistic'

THE Select Committee on Science and Technology was over-optimistic in its recent assessment of energy savings likely from restraints on private motoring, according to the British Road Federation.

Transport accounts for less than 13 per cent of all energy used and only 21 per cent of oil consumption in the U.K. and 43 per cent of oil consumption.

The committee's figures, which excluded the energy industries, such as electricity, showed transport accounting for 21 per cent of energy consumption in the U.K. and 43 per cent of oil consumption.

The committee's figures, which excluded the energy industries, such as electricity, showed transport accounting for 21 per cent of energy consumption in the U.K. and 43 per cent of oil consumption.

The committee's figures, which excluded the energy industries, such as electricity, showed transport accounting for 21 per cent of energy consumption in the U.K. and 43 per cent of oil consumption.

The committee's figures, which excluded the energy industries, such as electricity, showed transport accounting for 21 per cent of energy consumption in the U.K. and 43 per cent of oil consumption.

# Even we never built a truck like this before.

Eyes right.  
To the first of a completely new range of Mercedes-Benz heavy trucks. Every one designed and built to carry your goods profitably past the legislation and rising costs that are on their way.

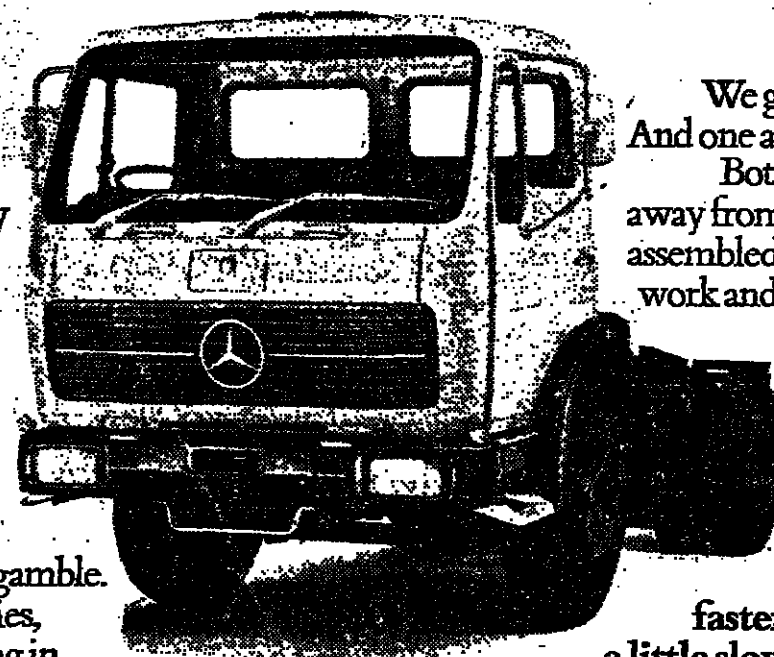
They're not only the most advanced trucks we've ever built. They're the toughest and most practical.

Their components have been proven by operators for five years. Not just a few months.

Buying one of our new trucks isn't a gamble.

The V-engine and drive line assemblies, though new to the UK, have been working in certain of our models since 1970.

Any teething troubles are long gone. And each component's efficiency and durability is established fact. Not drawing-board fiction.



We give you a choice of cabs. One slim. And one a sleeper.

Both provide all the comforts of a home away from home. And each is superbly assembled and finished, to take years of hard work and come up shining.

Before it leaves our factory, it's fully painted with primers and coat after coat of paint. Inside and out.

Ready to bear the colours of your company.

The cab is streamlined to be faster through the air. And in turn, a little slower through fuel.

The passing air is well-directed too. To stop windows and mirrors from whistling and soiling. Clearly a safety feature.

As is the cab's construction. Much of it is double skinned. Many panels being rounded to absorb impact. While the whole thing is structurally braced to withstand forces from front or rear.

The way they're serviced is linked to the way they're built.

All are designed around a single range of units or modules (engines, transmissions, axles and chassis frames). Each of which has many parts in common.

Access to service couldn't be better.

A front panel flips open for everything routine. While, for more formal stuff, all is revealed by the cab's high degree of forward tilt.



Even operating constantly at 38 tons, they're achieving the impossible by proving to be even more economical and reliable than our current range of heavies.

Confidently, you can expect them to last even longer too. Initially, two tractor units have been specially selected for the UK.

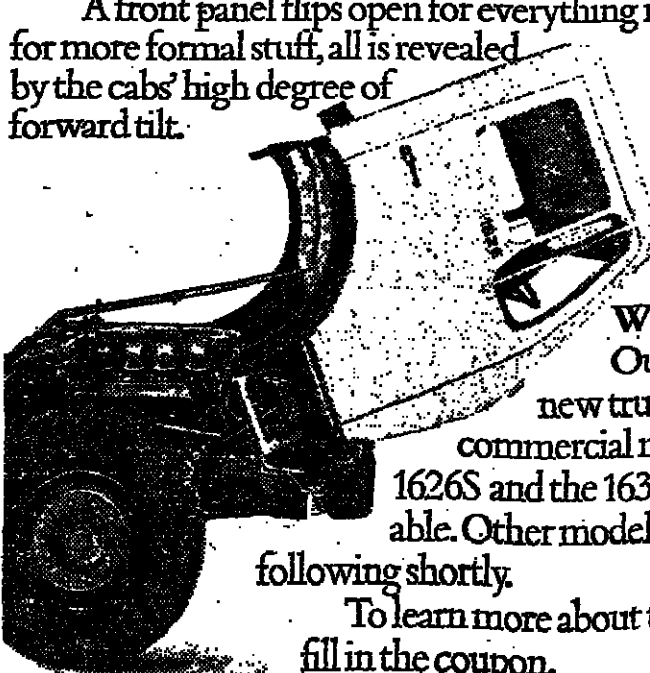
The 1626S with a 256 bhp V8 engine. And the 1632S with a V10 that produces a full 320 bhp.

Both models outstrip the toughest of power-to-weight legislation. Without the stresses and strains of turbo-charging. They're the perfect match for British operators.

Cabs, axles and wheelbase options have been carefully chosen to accept almost everything you might need to hitch up. Yet still remain within the 15 metre limit of the law.

Compact outside, our new heavies have even more legroom and headroom than our current ones.

So, any tales you've heard about big insides needing big outsides are just manufacturers' tall stories.



When and where?

Our revolutionary new trucks are the most commercial news in years. The 1626S and the 1632S are now available. Other models will be following shortly.

To learn more about them, fill in the coupon.



Mercedes-Benz. The way every truck should be built.

Mercedes-Benz (United Kingdom) Ltd., Commercial Products Division, Great West Road, Brentford, Middx. TW8 9AH. Tel: 01-560 2151. Telex: 24230.

Please send me further details of the new Mercedes-Benz heavies.

Name \_\_\_\_\_

Company \_\_\_\_\_

Address \_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

\_\_\_\_\_

## Castrol venture in Japan

BY ADRIAN HAMILTON

CASTROL, the oil lubricant company bought out by Burmah, is entering a joint venture in Japan to manufacture automotive chemicals, it was announced last night. The joint venture agreement has been signed with three Japanese companies, Nippon Shokubai, Setken Kagaku and Topy Menka.

The first project will be the construction of a plant to produce antifreeze/coolant and brake fluids to be completed next spring.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

The move comes at a time when tough Japanese laws on pollution, particularly from cars, require an upgrading of existing antifreeze and brake fluids. Clearly, the Japanese hope through this deal, and the move it gives them to Castrol's experience, to take advantage of the development to establish a market position in the field.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

The move comes at a time when tough Japanese laws on pollution, particularly from cars, require an upgrading of existing antifreeze and brake fluids. Clearly, the Japanese hope through this deal, and the move it gives them to Castrol's experience, to take advantage of the development to establish a market position in the field.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

The move comes at a time when tough Japanese laws on pollution, particularly from cars, require an upgrading of existing antifreeze and brake fluids. Clearly, the Japanese hope through this deal, and the move it gives them to Castrol's experience, to take advantage of the development to establish a market position in the field.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

The move comes at a time when tough Japanese laws on pollution, particularly from cars, require an upgrading of existing antifreeze and brake fluids. Clearly, the Japanese hope through this deal, and the move it gives them to Castrol's experience, to take advantage of the development to establish a market position in the field.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

The move comes at a time when tough Japanese laws on pollution, particularly from cars, require an upgrading of existing antifreeze and brake fluids. Clearly, the Japanese hope through this deal, and the move it gives them to Castrol's experience, to take advantage of the development to establish a market position in the field.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

The move comes at a time when tough Japanese laws on pollution, particularly from cars, require an upgrading of existing antifreeze and brake fluids. Clearly, the Japanese hope through this deal, and the move it gives them to Castrol's experience, to take advantage of the development to establish a market position in the field.

Consumption of antifreeze in Japan amounts to some 55,000 tons, while the market for brake fluid is about 15,000 tons.

while Castrol's main role will be to supply the technology.

## LOCAL AUTHORITY BONDS

Every Saturday the Financial Times publishes a table giving details of Local Authority Bonds on offer to the public.

For further details please ring  
01-248 8000 Extn 459

## You have more to give the future than you may think

A bequest to Help the Aged can continue your goodwill for many generations, by providing day centres and other practical help to the desperately lonely and needy all over the world.

It means that old folk struggling alone against dismal housing conditions and hunger are given a new lease of life and find friendship and help.

No Gift Tax is payable on legacies to charity up to a total of £100,000, and a large estate can actually save considerable duty.

For full information write to:

The Hon. Treasurer, the Rt. Hon. Lord Maybray-King, Help the Aged, Room FT6L, 8 Denman Street, London W1A 2AP.

\* £150 inscribes a name on the Founder's Plaque of a new Day Centre.

\* £100 names a hospital bed in memory in India or Africa.

\* £100 names a hospital bed in memory in India or Africa.







ment  
ear

Competition's hotting up.  
Tell me all I need to know about insurance.



## Trust Royal Insurance to know...

If anything like this happens in your business, you will want quick answers to three questions. Does my insurance cover it all? Am I covered against the interruption to the business and loss of profits? How quickly will my insurers act? The answers will depend on your choice of insurer.

At Royal we have been covering the

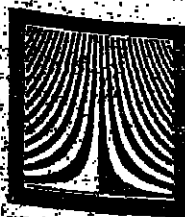
risks to industry and commerce for 130 years. We know the cover you need. And we know how important time is to you. We will look after you fast. We are a big company with total assets of over £1,000 million—and we give big company service, plus the personal touch.

Ask your broker about Royal Insurance.

Big, strong and built to last

Royal  
Insurance looks after you. Fast.





# The Technical Page

EDITED BY ARTHUR BENNETT AND TED SCHOETERS

## MATERIALS

### Extruding cement in complex shapes

**BANCEM** is a new method of mixing, moulding or extruding fibre-reinforced cement materials to produce a strong, and light end-product with a wide freedom of choice of shapes and at high production speeds.

The outcome of a great deal of development work on the mixer, its handling and the machinery to do the job, the approach is being followed by Banbury Buildings, the pre-cast industry world-wide. The company is believed to be the largest manufacturer in Europe of pre-cast concrete garages and commercial buildings and has been doing a good trade with even such a distant market as Japan. It is a well-placed to judge whether or not the process will help the industry.

The process results in much higher speeds of production being achieved than in the sprayed method, eliminates the need to extract surplus water from the mix, and yet because of the special technique used by the machine and the mixer, fibres are oriented to give far better strengths than the traditional moulding method.

Machinery and mixer have already been fully patented in many countries of the world, and manufacture has started at Banbury of some of the items already made in concrete using conventional methods, and excellent results are being obtained. Not only is the quality of moulding greatly improved, but the product is much lighter and stronger, than achieved by any previous methods. At the same time it is being found that complicated shapes, traditionally made in timber, can now be produced by the process with as little waste. The substitute has first

class appearance, requires no maintenance, and has a very long life.

Basic of the process is the accurate mixing and blending of the grout and fibres, to ensure an even mix, and to ensure that there is no damage to the alkali resistance of the fibres. By vibrating, using a unique method, the fibres in the mix are oriented and fluidised, into moulds, so that the resulting product takes on the exact form of the mould, will flow into intricate patterns, and the fibres remain well oriented to reinforce the material against the stresses which will normally be applied. The machine can fill moulds at up to five metres a minute. The mixer can mix materials which will not flow, and achieve low water/cement ratios of as little as 0.3 with up to 5 per cent of

fibre, without the extensive use of additives.

As a result of this a whole range of new designs are being, and can be, produced, which result in very much lighter products becoming available, and moves the GRC material into markets which could not previously be considered.

Banbury is talking to a number of overseas groups interested in the production system, and expects to reach a number of agreements with Middle and Far Eastern companies very soon. It is on Leamington Spa 27151.

## INSTRUMENTS

### Low-cost single beam 'scope

ACCORDING TO Scopex Instruments there is a potential market for about 20,000 oscilloscopes under £100 in the U.K. alone, half of which would be destined for the educational field and the remainder to industry in general.

Exploiting the market seems to depend on selecting the right price-performance mix. It is possible to buy an instrument for as little as £20 or so but, in the opinion of Scopex, these do not offer the right qualities.

Accordingly it has brought out the AS-5 single-beam oscilloscope which has a vertical amplifier with a sensitivity range of 10 mV/cm to 50 V/cm and a bandwidth of 6 MHz. There is a 16-range timebase with calibrated sweep speeds from one microsecond/cm to 100 milliseconds/cm. Screen size is 8 x 6 cm and the controls are colour-coded: red, blue and yellow for the

vertical amplifier, timebase and trigger controls, respectively, which should help the user to set up the instrument quickly. The price is £38 and more information can be obtained from the company at Pixmoor Avenue, Letchworth, Herts SG6 1JJ (Letchworth 72771).

### Finds the least trace

A THERMAL conductivity detector version of the GCD gas chromatograph has been introduced by Pye Unicam, York Street, Cambridge (0223 58886). They are for repetitive routine gas chromatography analyses. Based on the isothermal oven system used in the flame ionisation model, the thermal conductivity instrument uses a constant filament temperature detector. The linear range is enhanced, since filament resistance remains constant during sample elution and the elements are protected against damage by incoming gas. The detector is controlled heating due to temporary

**Thurley**

**FUME, LIQUID AND SOLID WASTE INCINERATORS**

Small for details

Thurley Incinerators

## POWER

### Packaged generators

A RANGE of generating sets with outputs from 25 to 75 kVA at 50 Hz, and 31 to 94 kVA at 60 Hz, has been introduced by Pethow, Sandwich, Kent CT13 9NE (0304 63111).

They are powered by Deutz 3, 4 and 6 cylinder, naturally aspirated, vertical in-line, air-cooled diesel engines, together with the exhaust gas turbo-charged 6 cylinder unit.

The generators are push-button electric start, or automatic mains failure start, or are designed as all-weather totally enclosed units for use on site or trailer mounted.

Automatic voltage regulation maintains performance with unbalanced loads—100 per cent current unbalance can be tolerated. The electric start control panel includes a triple pole circuit breaker and a manual voltage trim hand wheel. The complete package includes a 12-hour fuel tank and gauge, batteries and charging unit, engine instruments, and a fully instrumented control panel.

### Approved safe motors

WHAT IS claimed to be the first complete range of small/medium type N induction motors to be certified by BASEEFA for use in division 2 safe areas has been introduced by Brook Thompson Parkinson Motors, St. Thomas's Road, Huddersfield (Huddersfield 39469).

The motors are totally enclosed fan cooled to standard metric dimensions in frame sizes

D60 to D200L inclusive and available at speeds of 3000, 1500, and 750 rpm in output from 0.25 to 37 kw.

They comply with BS part 16 which includes attention to air gap, commutation and clearances, maintenance of construction and performance as to minimise the liability of area, space, or persons surface temperature during normal operation.

The range is available in the usual mounting and is superseded motors that the company to Oil Comp Materials Association stand

### High power iron-less motors

MURHEAD-VACTRIC is a plug into the large electric motor for the first time industrial dc motors develop up to 20 kw.

The new "maxi" V Vactor, which is almost completely new, has an iron rotor construction with advantages of low inertia, torque from rest to high speed, up to 10,000 rev/min, rotation at low speeds, a capacity to deliver high torque.

Potential customers: machine tools, textiles, putters, automatic process systems, fork lift trucks, and submersibles.

The motors are being available following a major agreement between Mr Vactor and Messrs. S.A. company which has manufacturing facilities in Spain.

Vactor Control. Equi Garth Rd., Morden, Surrey GU11 7BB.

## PACKAGING

### Food pack film stops microbes

BASF has developed Ultradrur film (polybutylene terephthalate) for coating boards, and as a transparent cover, allowing foods to be prepared, sealed in their containers and then cooked at temperatures from 180° to 220°C.

Although the film expands at these temperatures it reverts to its normal shape on cooling.

Apart from the convenience of this type of packaging to the manufacturer, the food remains absolutely sterile in the sealed area, a foam of live visually and also gives it sales appeal.

Ultradrur coated packs can be heated either in conventional ovens or microwave ovens, can be used for cake mixes, instant meals or de-frozen foods that have to be cooked in their packs.

The special properties of Ultradrur which make it suitable: Dover CT17 9DB, Dover

### SAFETY Finds leak with ease

LEAKS in any pressure system can be located and conveniently with a surface tension fluid cal detector from Industrial.

When a small quantity of liquid is applied in the area, a foam of live visually and also gives it sales appeal.

Packed in 120 ml poly bottles it is convenient for use by people to car ovens or microwave ovens, can be used for cake mixes, instant meals or de-frozen foods that have to be cooked in their packs.

The special properties of Ultradrur which make it suitable: Dover CT17 9DB, Dover

## HEATING

### Vacuum oven range

A RANGE of microwave vacuum ovens—Magovac—for use at either 2450 MHz or 900 MHz with power ratings within the range 24-25 kW has been introduced by Magnetrone, Thurston Boulevard, Leicester LE4 7LE (0533 78788).

The smaller ovens may be of interest to industrial research and product development groups as they offer the facility of combining microwave heating with low pressure environments. The technique could be valuable in countering flavour-loss in the preparation of foodstuffs and solute migration in pharmaceutical and chemical products.

### Heat from the ceiling

MODULAR heating panels with integrated nonhygroscopic thermal insulation which will radiate heat from the ceiling, have been developed by Atkinsons Electrical and Engineering Company, Eastwood Works, Fenry, Cornwall (0327 3588).

Nominally 1 metre square, the panels are rated at 72 W and weigh 11 oz. Panel width varies from 350 to 600 mm. and can be

## HEATING

### Vacuum oven range

A RANGE of microwave vacuum ovens—Magovac—for use at either 2450 MHz or 900 MHz with power ratings within the range 24-25 kW has been introduced by Magnetrone, Thurston Boulevard, Leicester LE4 7LE (0533 78788).

The smaller ovens may be of interest to industrial research and product development groups as they offer the facility of combining microwave heating with low pressure environments. The technique could be valuable in countering flavour-loss in the preparation of foodstuffs and solute migration in pharmaceutical and chemical products.

### Heat from the ceiling

MODULAR heating panels with integrated nonhygroscopic thermal insulation which will radiate heat from the ceiling, have been developed by Atkinsons Electrical and Engineering Company, Eastwood Works, Fenry, Cornwall (0327 3588).

Nominally 1 metre square, the panels are rated at 72 W and weigh 11 oz. Panel width varies from 350 to 600 mm. and can be

## NORTH SEA OIL

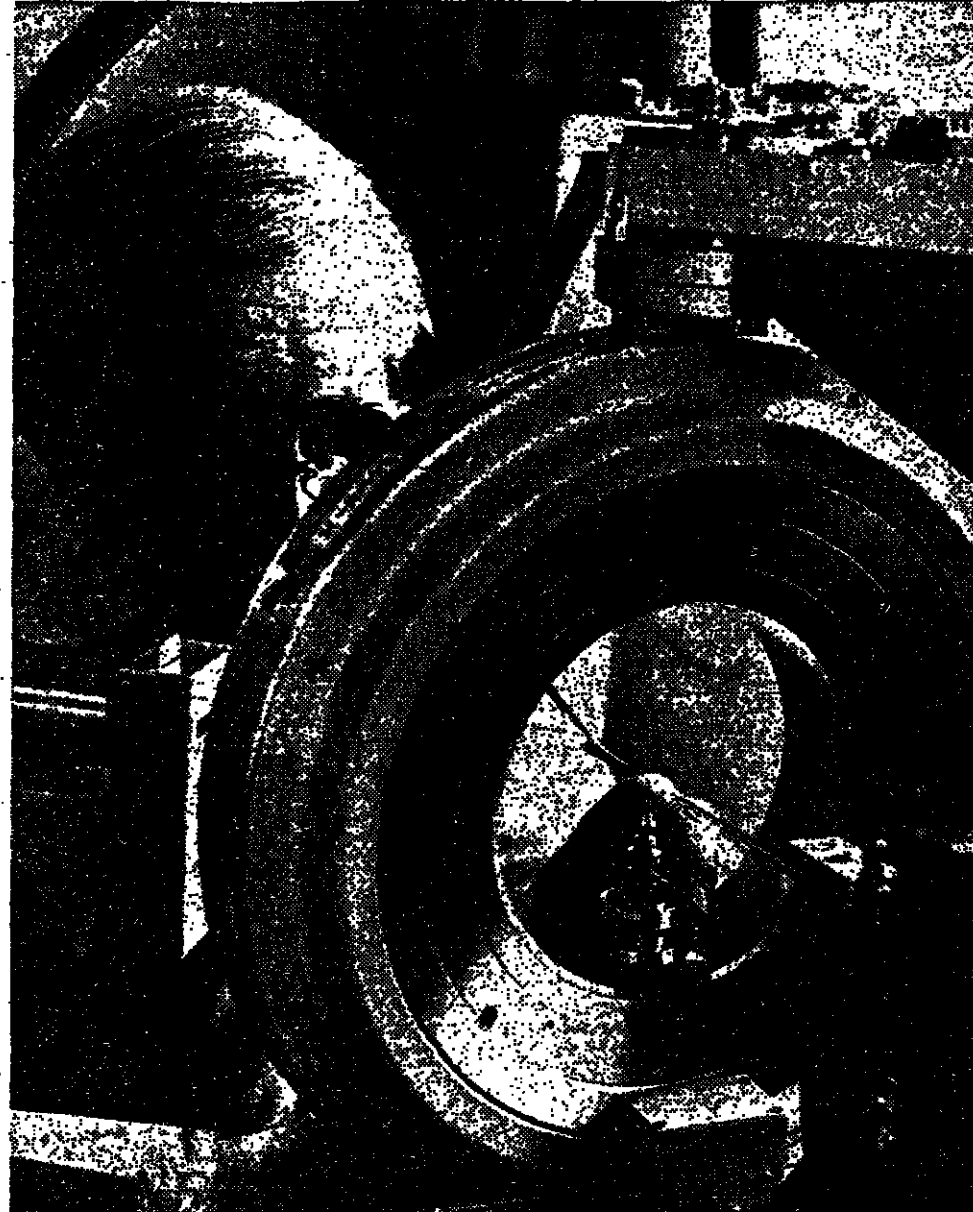
### Radio link for oil platforms

A TROPOSPHERIC scatter radio link between two Phillips Petro-

leum oil production platforms in the Ekofisk and Cod fields is to be supplied by Marconi Communications Systems.

Scheduled to become operational in the summer of 1978, the link will span 50 miles and will operate in the 2.5 GHz band. It will carry 12 voice channels initially and has a maximum capacity of 24. Operating at a nominal 1.5 watts, the terminals at each end will be based on Marconi's H3222 ultra drive equipment and the H3422 quadruple receiver. The contract, which includes aerials, feeders, spares and installations, is worth over £200,000.

The unit is freestanding on a



First Philips PW 1100 single-crystal diffraction meter to be installed in the U.K. has gone to the Department of Chemistry at the Polytechnic of North London. It will enable Dr. Philip Owston, Head of the Department of

Chemistry at the Polytechnic and his colleagues to carry out approximately 20 complex analyses per year, whereas previously only 1-5 analyses could be made, depending on the number of students involved in a project.

## HANDLING

### New ideas from Boughton

ABOUT 1,500 representatives from a broad range of industries attended the Boughton Group's three-day open air exhibition at Little Chalfont, Bucks, which closed last Saturday.

The group, which has an annual turnover of about £4m, is and exports over 70 per cent of its output. It is a large part of its activities to the development of special purpose components and vehicles. These range from winches to mobile workshops, trailers, mobile waste handling and compaction systems, municipal and airport fire, and crash tenders.

Latest of the fire-fighting units is a 6-wheel, 22-ton unit with a rear mounted engine, although this is small compared with the 38-ton crash tender which they are now able to produce.

There are several new products on the waste-handling field. Among them is the Anchorpac industrial waste compaction system, which will handle light to medium unsegregated refuse, including timber pallets. Also coming off the production line is a side-loading refuse-compaction vehicle called the Anchor Five Pak. It is a 14 cubic yard compaction container with an integral 4 cubic yard capacity hopper.

Another useful vehicle has been developed for handling containers. Hydraulic controls enable one operator to carry, lift and tip containers weighing up to 10 tons. Another version of this will handle 15-ton containers.

Also on show was a small, multi-purpose 3 cubic yard capacity trailer which can be towed around factories, building sites and so on, to collect refuse.

It was announced at the exhibition that a number of 1-ton Payload all-steel cargo-carrying trailers were to be supplied to Denmark for use by the coast-guard, and that 15 Anchorpac waste compaction units were to be supplied to a supermarket chain in Germany.

There are nine companies in the Boughton group, which has its headquarters at Bell Lane, Amersham, Bucks.

Also on show was a small, multi-purpose 3 cubic yard capacity trailer which can be towed around factories, building sites and so on, to collect refuse.

It was announced at the exhibition that a number of 1-ton Payload all-steel cargo-carrying trailers were to be supplied to Denmark for use by the coast-guard, and that 15 Anchorpac waste compaction units were to be supplied to a supermarket chain in Germany.

There are nine companies in the Boughton group, which has its headquarters at Bell Lane, Amersham, Bucks.

Also on show was a small, multi-purpose 3 cubic yard capacity trailer which can be towed around factories, building sites and so on, to collect refuse.

It was announced at the exhibition that a number of 1-ton Payload all-steel cargo-carrying trailers were to be supplied to Denmark for use by the coast-guard, and that 15 Anchorpac waste compaction units were to be supplied to a supermarket chain in Germany.

### Synthetic cricket pitch test

RUBBER and Plastics Research Association has been commissioned by the National Cricket Association to develop performance specifications for non-turf cricket pitches.

It is believed to be the first time that any national sporting products tested by RAPRA who will recommend to the NCA those products which should be allowed to display an NCA symbol (corresponding, for example, to the BSI kitemark or the Design Council logo). The symbol will indicate a minimum level of quality for the non-turf pitch and therefore will be a valuable guide to buyers such as Local Education Authorities or individual clubs.

### PRODUCTS

### Nylon grass sports field

SYNTHETIC grass surfacing, Poly-Turf, is offered by Sports Surfaces International, a Dunlop company.

The contract will involve the supply, installation, testing and commissioning of three 1200 kW turbo-charged diesel generators set operating at 11,000 volts, 50 Hz, with a speed of 750 RPM. The sets are to be provided complete with exhaust systems, cooling towers, starting equipment, alternator and control panels with instrumentation and monitoring equipment, and ancillary equipment including local cables and pipe connections.

Civil Engineering works will be provided under another contract. Tenders must be from manufacturers of Diesel Engines. Applications from firms who assemble component units will not be considered.

### CONTRACTS & TENDERS

**GREATER LONDON COUNCIL**  
**DEPARTMENT OF PUBLIC HEALTH ENGINEERING**  
**THAMES BARRIER PROJECT**  
CONTRACT TA FOR GENERATING PLANT

The Greater London Council intends to invite tenders for the supply and installation of the complete generating plant for the above project.

Construction of the Barrier has commenced and is due for completion in 1978. The contract for the generating plant will be awarded in August 1978. The plant has to be delivered to site for erection in November 1978. Tenders will be invited during February, 1978 and the tendering period will be two months.

Firms who wish to be considered for inclusion in the list of tenders are invited to apply in writing before 14th October, 1975 to the Consulting Engineers:

**RENDEL PALMER AND TRITTON**  
Southwark Bridge House,  
61 Southwark Street, London SE1 1SA

### Moving the heavy load

THERE is a demand for an increase in the mobility of heavy and dense loads and Air Cushion Equipment has developed a new, larger Water Skate capable of lifting 100 tons at pressure of up to 80 psi to meet it.

The existing design has already been tested to a capacity of 35 tons and a complete system in moving over 200 tons.

# Let Merrill Lynch tell you how you can increase the return on stocks you already own

Merrill Lynch invites serious investors to learn all about a little-known investment technique called option writing.

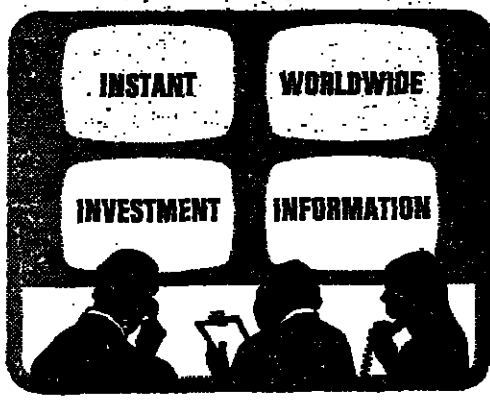
It could help you make money on common stocks you already own, for agreeing to sell them in the future.

You will learn:

\* How much money you could reasonably expect to make over a period of time.

\* How option writing can produce a continuous cash flow while helping you to cut stock market losses.

\* Whether option writing is the right strategy for you. The risks involved. How to get started.



Send the coupon or telephone to fix an appointment and to obtain the relevant documentation.

Gentlemen, I want to hear what you have to say about option writing. I hold common stocks worth up to \_\_\_\_\_ (value)

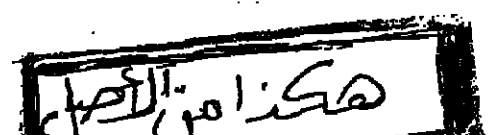
Name \_\_\_\_\_

Address \_\_\_\_\_

Telephone \_\_\_\_\_

**MERRILL LYNCH, PIERCE, FENNER & SMITH LTD**  
Licensed dealer in securities  
Time and Life Building, 153 New Bond Street, London W1Y 9PA. Telephone: 01-493 7242

Affiliates in Amsterdam, Athens, Barcelona, Beirut, Brussels, Buenos Aires, Cannes, Caracas, Dubai, Düsseldorf, Frankfurt, Geneva, Hamburg, Hong Kong, Kuwait, London, Lugano, Madrid, Manila, Milan, Panama City, Paris, Rome, Rotterdam, São Paulo, Seoul, Singapore, Taipei, Tokyo, Vienna, Zurich.







# Building and Civil Engineering

## Wimpey announces £10m. projects Cementation takes major mine award

MAINLY housing, but also some runway work and a plant extension are included in about £10m. worth of contracts disclosed by George Wimpey and Co.

The main job in the new round is for £4.6m. and requires the construction of 452 houses and associated external works for Peterborough Development Corporation.

The project consists of 281 three-bedroom two-storey houses, 52 two-bedroom two-storey houses, 40 four-bedroom two-storey houses, 38 four-bedroom three-storey houses, 22 aged persons two-bedroom flats, eight aged persons one-bedroom flats and 10 two-bedroom disabled persons bungalows. All dwellings will have gas-fired hot water central heating.

Work on the project at Paston Ridings, Peterborough has started and is due for completion in three years.

City of Birmingham District Council has awarded a contract for the construction of 213 homes valued in excess of £2m. to the Birmingham office of George Wimpey.

Generally, the contract is to be constructed in No-Fines technique, the site being off Bed Lane, Frankley, in the Bromsgrove District council area. The project comprises 76 two-bedroom houses, 68 three-bedroom houses, 18 four-bedroom houses and 30 one-bedroom flats all in two-storey No-Fines construction. In addition, there will be 21 brick built, one-bedroom bungalows and 82 garages.

Work is due for completion in May 1977.

Homes for nearly 600 people will be provided at Bransholme, Hull, as a result of the award of

a contract by the City Council of Kingston-upon-Hull.

The contract is for 166 dwellings and is valued at £1,185,000.

The project will be constructed in Wimpey's No-Fines concrete technique and includes a variety of eight types of houses, bungalows and flats. There will be 101 three-bedroom houses, 10 four-bedroom houses, nine two-bedroom houses, 31 bungalows and 15 flats. Included in the external works will be 52 garages and an electricity sub-station to be constructed in pre-cast concrete.

Work is now starting and is due for completion in November 1976.

The Property Services Agency of the DOE has awarded a contract valued at £15m. for the resurfacing of two runways at RAF Station Brawdy, Haverfordwest, Dyfed to George Wimpey and Co.

The operation involves the re-shaping and surfacing of two runways, and taxiways. Resurfacing involves the laying of 49,000 tonnes of Marshall asphalt and 148,000 square metres of 20 mm thick friction course.

Work has started and is due for completion in August 1976. The final contract for an unspecified amount is from Glaxo Laboratories whose Bernard Castle factory, Co. Durham, is to have a two-storey extension. It includes ground and mezzanine floors with a reinforced concrete frame to the ground floor and a steel frame to the first floor, with metal cladding. The main elevation is brickwork.

Total floor area is 2,570 square metres and the contract includes a high proportion of services.

Work has started and the project is due for completion by October 1976.

## Cementation takes major mine award

NEW ZEALAND'S Ministry of Mines has awarded a contract worth NZ\$6.7m. (£3.5m.) to a joint venture of the Cementation Company (New Zealand) and Messrs. Green and McCahill (Contractors) for driving two inclined drifts at the new Huntly Colliery, near Hamilton, NZ.

Cementation has a 60 per cent share. The drifts will be about 1,000 metres each in length, dipping at one in four. The top 120 metres of each drift is in alluvium and will be driven using a shield being designed by Cementation at its Doncaster headquarters.

Dewatering of the unconsolidated alluvium will be by deep wells, but because of extensive interlocking of clays and sands, additional security will be provided by vacuum/bleed wells through the face to maintain stability.

Senior staff will be seconded from Cementation Australia and it is expected that the work will take about 2½ years to complete.



## STEEL BARS AND SECTIONS

RELIABLE SERVICE in times of scarcity and plenty

GKN(South Wales) Ltd.  
A member of GKN Rolled & Bright Steel Ltd.  
Cwmwr, Gwent  
Gwent CF11 1TL  
0222-33033

## £3.3m. jobs by Sunley

BERNARD SUNLEY and Sons has a £3.3m. contract for the construction of a depot and flats at Lisson Grove for the City of Westminster.

The work includes a four-storey depot building with yard and contains an adult training centre, stores, workshops and offices, shared amenity accommodation and medical cleansing centre.

The buildings will provide accommodation for the engineers, housing, Health and Social Services departments. There will also be a three-storey block containing staff flats, garages, covered parking spaces, stores and an electricity substation. For the London Borough of Bromley, Sunley is to build blocks of flats, maisonettes and terraced houses at Lancaster Place, and Victoria Place, St. Paul's Cray, Kent.

This job is worth £1m.

## Superstore worth £4m. to Laing

BOLTON and Wigan Regional Co-operative Society has awarded a £750,000 contract to the north west region of John Laing Construction to build a "superstore" at Hildesley, Lancs.

With adjoining warehouse and staff accommodation, it will be situated on an eight-acre site off Market Street, Hindley. The store will have a sales area of 28,000 square feet.

The building will have a foundation of cast in situ driven piles and reinforced concrete ground beams. It will be of steel frame construction clad externally in smooth brown facing bricks and internally in hollow concrete blocks with fair faced finish.

## High speed cold store

SMITH and Partners, specialist in the design and construction of cold-storage facilities, has a contract worth more than £250,000 placed by Bejam Group, Britain's largest freezer-foods company.

It is for the construction of a 5,800 cubic metres (205,000 cubic feet) distribution cold-store with associated offices and staff amenities at the Bejam headquarters in Stanmore, Middlesex. Equipped with a 1,032 cubic metres (36,430 cubic feet) insulated loading bank, a system developed by Smiths to the most advanced mechanical handling criteria, it will accommodate up to 1,000 tons of frozen meat in Bejam retail packs at -23deg.C. (-10deg.F.).

## Nigeria will build a £50m. campus

TWO BRITISH firms are among the consulting engineers recently authorised to start detailed design work for Phase One of the development programme of the University of Nigeria, Nsukka. They are BMMK and Partners, civil and structural engineers, and G. H. Buckle and Partners, mechanical and electrical services engineers. Phase One, for which the consulting engineers were appointed in 1974, has an estimated value of £50m. It comprises the University's first four colleges, the

facilities of physical and biological sciences, an auditorium, the infrastructure for a shopping centre and all necessary services and site work.

The other consultants involved are Asika and Partners, of Enugu, civil and structural engineers, and S. O. Oyesanya and Associates, of Lagos, structural engineers.

The architects for the University are Deji Ogunuga, James Cubitt and Partners, Lagos, and James Cubitt, Fehlo Atkinson and Partners, London.

## Water and hospital for Riyadh

DETAILED analysis of the water requirements for Riyadh has been made in a study submitted by Sir M. MacDonald and Partners, consulting engineers of Cambridge, to the Saudi Arabian Ministry of Agriculture and Water.

There is virtually no source of surface water in the area and the city of Riyadh had for some time drawn on upper ground water for gardens and domestic supplies. The upper aquifers however became polluted with sewage and to a great extent exhausted. Exploitation of the deep Minjur aquifers under the city was resorted to and water of a relatively poor quality is currently pumped from a depth of 1,200 metres.

The study has identified additional sources of fresh water for the city, the population of which has been growing rapidly, throwing an increasing strain on services and in particular on the water supply system. For some years the consumers have had to purchase water brought in by tanker at considerable expense during the hot summer months from May until October.

Three methods of increasing the supply by 100,000 cubic metres per day include drawing additional water from the Minjur aquifer, and subjecting it to desalination before distribution. Exploiting the Wasia aquifer, known to exist about 100km. east of Riyadh, and pumping it to the city with either normal water treatment, or desalination if considered necessary, is another possibility.

This proposal and the preceding one takes account of the fact that Wasia water quality is not consistent or accurately predicted.

able and the consultants have recommended a Wasia plant with desalination, producing water at an estimated cost of SR3.30 per cubic metre.

There is an opportunity for U.K. desalination experts and civil engineers to win a large contract in an area where success will spell further jobs.

## Hospital plan

Meanwhile, Medical Faculty Consultants, a group comprising Cusdin Burden and Howitt (architects), W. E. Atkins and Partners (consulting engineers) and Edmond Shipway and Partners (quantity surveyors), have been advised by the University of Riyadh, Saudi Arabia, that it has accepted the tender received from the German consortium led by Polensky and Zolner for the design of the new Faculty of Medicine buildings. All the drawings and specifications have been completed, and the consultants have now been instructed to manage the construction contract and to provide the site supervision staff.

The project, which will consist of three phases, comprises the provision of teaching facilities for an intake of 100 students per year, together with 575-bed teaching hospital. The first stage will be completed and handed over to the University in 2½ years and the third and final stage in 4½ years. The total value of the contract will be between £45m. and £50m. sterling. Provision has been made in the design of the facilities to be increased if required.

Some plant and equipment orders are likely to come to Britain.

## Office and plant jobs for Jarvis

PRODUCTION areas, offices and plant are included in five contracts totalling £1.5m. awarded to J. Jarvis in London and the Home Counties.

Twelve floors of the recently completed 17-storey tower block in the central development area of Woking, Surrey are being fitted out under a £1m. contract to provide new offices for the International Exports Division of the British American Tobacco Company. Architect is Mobsby Hedges Partnership.

In Fulham an extension is being provided for Habit Diamond Tooling which will centralise the production of diamond tipped tools on Roxby Place. Architect here is Fuller, Hall and Foulsham.

A large warehouse for the recycling of metals is being constructed in the complex of Delta Road (London) at Greenwich. At the British American Tobacco Company, a basement floor to enable new machinery to be installed in the stereo foundry. The Crown Estate Commissioners have placed a further contract with Jarvis to modernise a terrace of 12 houses in Ponsbury Place, Piccadilly to provide four houses and 16 flats.

## Store with offices

COSTAIN Construction is to build a £1.5m. department store with approximately 6,000 square feet of offices above it in Bromley for Kelburne Properties, a member of the Stock Conversion Group.

The six storey building will be of reinforced concrete construction with asphalt roof covering and claddings of facing brick, reconstructed stone panels and aluminium windows.

The works include some demolition, site clearance, external works and main drainage with lift pump chamber. Operations have begun and should be completed in December 1977.

Architects for the project are Shingler Risdon Associates.

## Housing on Tyneside

HARDSTOCK (Babcock and Wilcox) has been awarded a contract worth £1,075m. to build 138 houses at Law, Widdowburn, North Tyneside Metropolitan District Council.

Work will start later this year and completion in mid-1977 is scheduled.

Comfort Systems, another member of the Babcock and Wilcox Group, has won two contracts from the London Borough of Haringey worth over £400,000 in all, to modernise 54 flats and houses at Wood Green.

## IN BRIEF

• £1.5m. contract has been awarded to Marples/Ridgway Building to design and construct part of the first stage of the new cargo area at London's Gatwick airport. The 19-month contract consists of warehouse and office accommodation and is being undertaken for the British Airports Authority. The new cargo area, to be situated north of the main runway behind the control tower, is the first stage of a BAA scheme to accommodate Gatwick's increasing freight turn-over. The airport's present facilities were designed to handle 50,000 tonnes of freight but during the last financial year the volume passing through amounted to 58,329 tonnes. The new project will eventually be capable of handling 150,000 tonnes per year. Marples/Ridgway is also constructing the new police complex at Gatwick and both projects are being supervised from their regional office at Watford.

• Another town development project from the Basingstoke Development Group has gone to W. M. Annette of Basingstoke. This latest contract for the building of phase 2 of the Winklebury Centre is worth £518,000 and site works are now in progress. The new complex, which will form an extension to the existing Winklebury Centre in Winklebury Way, Basingstoke, comprises 63 flats, 8 shops and a doctor's surgery in six attached 3 and 4 storey blocks.

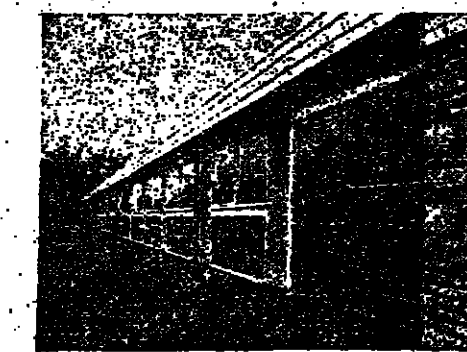
• Many new jobs are to be created at a £1.5m. meat factory being built for Buck Meat Producers at Turf in the Banch and Banchan district of the recently formed Scottish Grampian Region. The plant, being built by John Laing Construction, Scottish Region, under an £887,000 contract, has been designed to double Banchan meat producers' present capacity and will eventually employ a total of about 80 people, almost all of whom will be recruited locally.

• Twenty six new homes for prison warders at Barlinnie, Glasgow, are to be built in a £400,000 contract awarded by the Scottish Special Housing Association, on behalf of the Scottish Home and Health Department. Work is scheduled for completion in 18 months and will be carried out by Gilbert Ash (Bovis).

• Taunton and Deane Borough Council have accepted Reed and Mallik's tender of £344,669 for stages 2 and 3 of the Taunton Deane Eastern Relief Sewer. Work which will start shortly and last 1½ years, entails the laying of 2,000 metres of a main trunk sewer up to 1.5 metres in diameter at a depth of up to 5 metres.

• A £121,221 contract for roads and sewers has been awarded to Wrenco Contractors, of Maghull, Liverpool, by Warrington New Town Development Corporation. The work will take about five months to complete. A second contract worth £115,200 has been awarded to P. Casey and Co., of Rochdale, for the crushing and stockpiling of 115,000 cu. metres of demolition material at Gorse Covert, Risley. Work will be completed by late February.

## HOW TO SAVE £30,000 AND SIX MONTHS BY USING STOCKS SINGLE STOREY BUILDING SYSTEM\*



Stainforth Fashion Industries needed a new building to accommodate their rapid expansion programme. And they needed it fast.

First they talked to conventional builders. Then they talked to Stocks about their single storey system.

Stocks quote was cheaper than any conventional system price. By about £30,000.

And the building was completed in half the time the conventional builders allowed.

Quality didn't suffer either. Because the Stocks system is designed to pass on all the economies of planned buying to you, while strict quality control is exercised all along the line.

And the Stocks system is infinitely variable. Your buildings can be individually designed and you can use Stocks to lay the foundations. Or you can take advantage of the package deal and let Stocks handle all the work and worry.

From design to decoration.

So next time you have a single storey building project in mind remember Stocks. You could save thousands of pounds. And valuable time.

That's at least two very good reasons to send for our brochure.



Yes please, Stocks, send me your new full colour brochure full of actual case histories.

Name \_\_\_\_\_  
Position \_\_\_\_\_  
Company \_\_\_\_\_  
Address \_\_\_\_\_

\*The example given is one of our larger contracts but similar percentages can be saved on contracts from £5,000 to £100,000.

Also Builders of Modular Squash Courts.

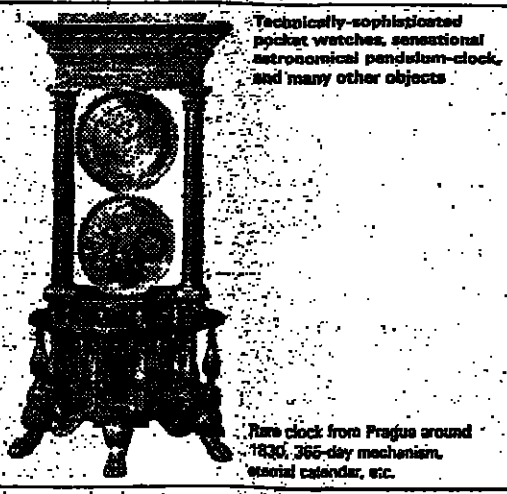
## A COMPLETE PACKAGE DEAL

Owen Thorn offer the facility to take full responsibility for any automated warehousing project, including civil works, from when the ground is cleared through to final commissioning and hand-over.

Owen Thorn Automated Warehousing Limited  
130 Newpark Court, Stratford, Essex, England  
Telephone 0246 53331  
Telex 661 95

## UTO AUKTIONEN

The New Swiss Auction House  
is holding its 2nd Auction  
September 29th to October 3rd, 1975  
in the Polder Glarner Hotel in Zurich  
Preliminary Inspection: September 24-27, 1975



Technically sophisticated pocket watches, astronomical pendulum clock, and many other objects.

Prize Objects from Many Fields

Monday, Sept. 29th: Watches, Clocks, Scientific instruments, automata, boxes  
Tuesday, Sept. 30th: Jewellery, silver, pottery  
Wednesday, Oct. 1st: Porcelain, fine pottery, glass, shoe collection, machinery  
Thursday, Oct. 2nd: Medieval art, Old Masters, modern art, ancient art, Far East, tapestries etc.  
Friday, Oct. 3rd: Carpets, maps, furniture  
Ask for our richly illustrated catalogue with 1800 objects (50.- Sfr.)

UTO AUKTIONSAG  
CH-8027 Zurich, Lavesstrasse 11  
POB 558, Tel. 01/253444

## Energy and Buildings

A conference at the Churchill Hotel, London on 1 October 1975 sponsored by "BUILDING"

More than 50% of energy used in this country is subject to decisions by those involved in construction and design. To discuss the implications of the dramatically altered energy situation "Building" has invited a number of experts to range over the whole field on design, building, materials, legislation and economic considerations.

The conference will be opened by Alex Edie, Parliamentary Under Secretary of State for Energy, and chaired by the Editor of "Building" and Peter Trench, Chairman of Y. J. Lovell (Holdings) Limited.

Full details from: Conference Organisers, "Building", 4 Catherine Street, London, WC2B 5JN. Tel. 01-436 6251.



## THE FINANCIAL TIMES

Incorporating THE FINANCIAL NEWS  
(Established 1888)  
(Established 1884)

Head Office Editorial & Advertisement Offices:  
BRACKEN HOUSE, CANNON STREET, LONDON, EC4A 3DF.  
Telephone Day & Night: 01-248 8000. Telegrams: Financial, London.  
Telex: 886341/2, 883897

For Share Index and Business News Summary Ring: 01-248 8026

Subscriptions: George Horne, George Road, London, E1 6AN. Telephone: 01-248 8026. Telegrams: Financial, London. Telex: 886341/2, 883897

Printed by: The Financial Times, 100, Abchurch Lane, London, EC4N 3DF. Telephone: 01-248 8000. Telegrams: Financial, London. Telex: 886341/2, 883897

MONDAY, SEPTEMBER 15, 1975

## The issue at Llanwern

IN THE LAST few months trade union leaders and others have been attacking companies for their failure to invest. The blastfurnace's dispute at Llanwern, which threatens to bring the bulk of the steel industry to a halt within the next few weeks, is a salutary reminder of what can happen when new investment is installed. The new 5,000-ton blast furnace, the first of its kind in the U.K. and a key element in the upgrading of Llanwern to internationally competitive standards, has been idle for most of the year while management and union haggled over rates of payment. Because the new unit is now needed to maintain production, the BSC started the commissioning process without waiting for an agreement on pay. As expected, the men refused to co-operate, commissioning will be halted and blastfurnacemen in England and Wales are threatening to withdraw their labour.

## Hostility

It is normal practice, when a new piece of machinery is installed, for a union to drive the hardest possible bargain on behalf of its members, in terms of both pay rates and manning scales. The fact that disputes of this kind sometimes lead to industrial action does not necessarily mean that collective bargaining has failed. The National Union of Blastfurnacemen has shown itself in the past to be not averse to "brinkmanship" in industrial relations, and there must be doubts about its ability or willingness to sustain a lengthy national strike in the face of hostility from the other steel unions. But whether the dispute is settled quickly or not, there are several aspects to the affair which give it wider significance.

The first has to do with the legacy from the past which the British Steel Corporation has inherited at the time of nationalisation. In the early post-war period, when new plant in the steel industry was brought on stream, very high wages were paid both to attract labour and industrial sickness.

## A slow recovery in the U.S.

THE LATEST economic news from the United States lends sad point to that country's growing obsession with events in Britain. On the most recent showing, inflation is accelerating, interest rates are rising, and the apparently strong recovery in retail sales of recent months has suddenly petered out—for the very good reason that real incomes are still nearly 5 per cent. below their 1973 peak. American commentators who have come increasingly to fear that Britain is not so much living in the past as providing a dispiriting glimpse of the future for industrialised economies are confirmed in their doubts and are indulging in another British habit—a positive orgy of self-analysis.

It is the reappearance of double-digit inflation which has created the greatest disquiet. In Britain it is so taken for granted that industries will charge prices based on a margin over costs, except in the most extreme circumstances that the fact is built into most models of the economy. The contrasting habit of the Germans and Japanese, who go aggressively for export sales when the home market is depressed, and Americans, who try to get their sales moving by aggressive pricing, is widely supposed to be an important reason for their greater dynamism. In the present recession, however, a good deal of U.S. industry seems to be behaving here, and responding to recession by cutting output and doing its best to preserve margins.

**Discouraging**  
Two main alternative explanations are offered for this discouraging change: inflationary expectations, and the financial squeeze. Both are to some extent familiar here, and both analyses suggest that a genuine U.S. recovery may be a great deal harder to achieve than was supposed until quite recently.

The worries about expectations are set out rather exhaustively in the latest economic newsletter of the First National City Bank, which has in the past built up an impressive record for monetary forecasting. One version makes highly familiar reading: after a decade of inflation and monetary expansion, businessmen are convinced that the authorities will inevitably relax monetary policy to accommodate price rises and allow further for some real expansion—especially in an election year. The confusing changes of target rates and base rates for measurement of monetary growth recently announced by the Federal Reserve Board might certainly encourage such suspicions, though the actions of the Fed still suggest that Dr. Burns is firmly resolved on gradual monetary growth, and is quite patient enough to wait until all those who set prices wake up to the fact that he means what he says. Citibank argues that he may well have no alternative anyway: Americans are so converted to monetarism that any relaxation of monetary policy would only further inflame expectation of inflation.

**Balance sheets**  
Unfortunately another school of monetarists—point out that the past inflation has so far strained the balance sheets of the U.S. corporate sector that companies can no longer afford to finance aggressive market tactics, high volume and low margins. This argument comes nearer to British experience, and sounds only too convincing; but at least it holds out a prospect which has some end.

The great open question for the future is about fiscal policy. There are growing rumours that the Administration is considering a further measure of reduction: will this help to reconstruct balance sheets, or simply inflame inflationary expectation again? The fact is that in the U.S., as in Britain, the inflation bogey must be more convincingly laid before any solid recovery seems likely.

The world's airlines are now discussing new passenger fare levels for 1976-77. Michael Donne reports

## The price of flying in the face of adversity

FEW people in the world airline industry now doubt that air fares on many routes will have to rise from next April 1, perhaps by as much as 10-15 per cent. Member-airlines of the International Air Transport Association have begun a series of meetings in Geneva, to be continued later this month and into October in Nice and Cannes, aimed at fixing passenger fares throughout the world for the 1976-77 period. With most of the delegates well aware of the need for rises to counter the combined effects on their profit and loss accounts of fuel price rises and general inflation, their arguments will be mainly centred on what amounts specific routes can bear.

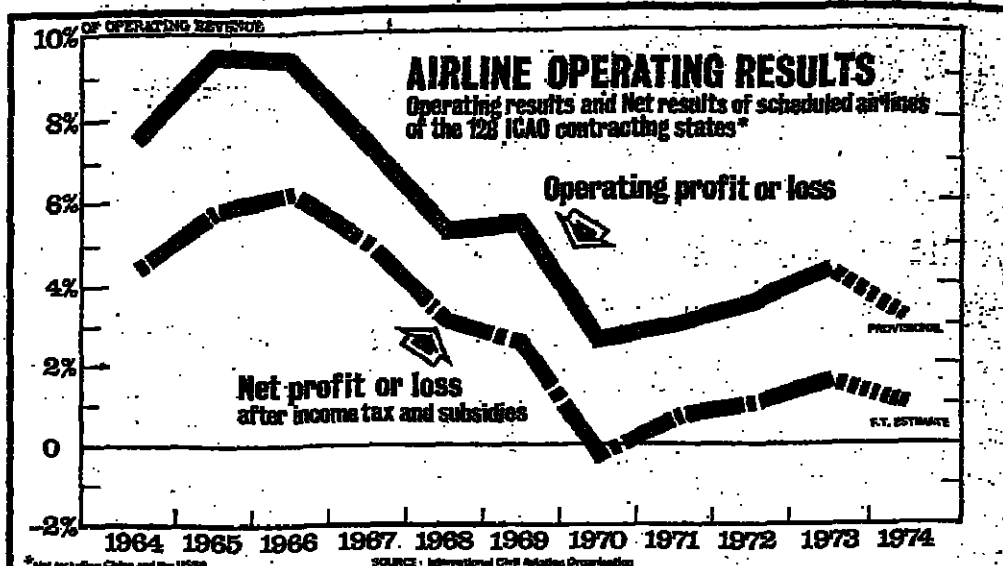
Many delegates, and their airlines, privately believe, however, that next April is so far ahead that it is almost impossible for them to fix realistic rates now, and that they may well have to ask for emergency increases to become effective earlier—especially if the oil-producing countries put up the price of crude and if the business recession worsens: this winter. Moreover, no one in the airline industry is prepared to say that even the fares negotiated for next April will remain unscathed through the rest of 1976 and into early 1977 if present inflationary trends continue.

## Important issues

In this situation, some of the other issues confronting these IATA "traffic conferences," such as the future level of fares for Concorde from January 1 which, while vital to the future of that aircraft and to British Airways and Air France, are of secondary importance to many other airlines, are likely to be dealt with only when the basic questions of future overall pricing policies have been settled.

The airline industry recognises that the fares rises of the past two years, which have resulted in some journeys becoming 50 per cent. or more dearer, together with the business recession in the industrial countries, have driven away traffic. They recognise, too, that the further rises now contemplated are certain to deter more would-be travellers, and might even delay the long hoped-for end of the world airline recession. The 3 per cent. growth in world air passenger traffic last year was the lowest for over 15 years. On many routes, especially in the U.S. and Europe, there was no growth at all, and on some traffic actually declined.

So far this year, there have been only a few signs of improvement. Inside the U.S., some airlines have reported an encouraging expansion in July and August, and are waiting to



## HOW AIR FARES HAVE RISEN

(SOME REPRESENTATIVE NORMAL TOURIST/ECONOMY RETURN RATES)

Between London and	July 1975	Nov. 1972	% increase	Route mileage
Amsterdam	53.60	32.10	67	276
Athens	228.60	146.30	56	1,790
Brussels	58.40	33.70	74	232
Cork	55.40*	33.70	65	422
Dublin	47.60*	28.40	67	346
Frankfurt	74.00	49.10	55	488
Geneva	89.60	55.70	61	548
Paris	50.80	29.60	71	250
Rome	150.40	90.00	67	1,070

\* As from September 1, when U.K.-Ireland fares were raised by a further 8 per cent.

airlines to seek rises of up to 15 per cent. in fares from cost of production, transport November 1, which so far have been blocked by the U.S. Civil Aeronautics Board.

## Bitterly critical

The airlines are bitterly critical of these fuel price rises. As far back as last autumn, Mr. Knut Hammarskjöld, director-general of the IATA, was claiming that the oil companies had been pricing jet fuel higher than other oil products, thereby ensuring that air transport made a substantial contribution to oil companies' profits and overheads. "This contribution appears to have simply been arbitrarily increased at the expense of the air carriers and ultimately the travelling public," he declared.

Moreover, the airlines are convinced that some governments are also at fault in encouraging this situation, notwithstanding the contribution that air transport makes to their countries' economies. "If 1974-75 over the previous year would have been 25 per cent. rise in fares, the IATA, for example, would have been able to recoup only some \$200m. of that in increased fares, there is still a deficit of between \$150m. and \$250m. to be made good on the North Atlantic alone. This has already led the North Atlantic



Mr. Knut Hammarskjöld, IATA's director-general: fuel on international flights should be supplied free of customs duties and other taxes, he says.

of about 20 per cent., and that for 1975 alone they will amount to some \$820m. against \$790m. last year and \$650m. in 1973. "This cost item," says IATA, "is forecast to rise at an average rate faster than any other cost. This further emphasises the absolute necessity for governments to keep the tightest control over the cost-benefit ratio of their elements in air transport infrastructure."

## Noise and pollution

On top of all this, the world airline industry is also faced with either having to find some \$2.5bn. to "retrofit" about 2,400 first-generation jet airliners with devices to reduce their noise and pollution or to phase many of these aircraft out of service. That is almost certainly what is most likely to happen. The airlines, through the IATA, have told governments, and notably the U.S. Government, that legislation to enforce retrofitting will impose such a severe financial burden on the airline industry that it will not be able to meet it: the money will have to come from public funds, or the industry will have to get rid of many of its older jets—many of which are too "thirsty" on fuel anyway.

The collective effect of these and other inflationary factors on the world airline industry has been a faster rise in expenses than in revenues. For 1974, the International Civil Aviation Organisation has provisionally estimated that revenues of the airlines in its 128 member-states went up by 18 per cent. to \$31.5bn. against a 17 per cent. rise in expenses to \$30.5bn. This still left a small trading surplus of \$1bn., but by the time taxes and interest payments and other items have been taken out (and these can account for as much as two-thirds of the total), the result is likely to have been at best only a marginal profit for the world industry as a whole, within which many

airlines incurred substantial losses.

The airlines have sought counter their problems in various ways. Many of the measures introduced at the time of the fuel crisis in late 1973 and early 1974, primarily to save fuel, have been found to save no more and are being continued. They include cuts in frequent routes between airlines, strict flight planning to cut r mileages, slower in-flight speeds and less taxiing at airports as to burn less fuel, and ground-based training to cutting hours. Whether some of these measures have enough is a matter for argument. Certainly for the first six months of 1975 on the North Atlantic, despite all the cost-reduction agreements and moves, the overall load factor was still around 54 per cent., indicating that there were roughly two seats available each passenger—3.78m. passengers for 7m. seats. Whether airlines can ever get better results than this on the Atlantic, in view of the competition between more than 20 airlines from nearly as many countries, is doubtful. It is probable that the kind of swapping that Pan Am and have achieved, and on the side, withdrawal from the being of British Caledonian would have to be matched by similar developments in other countries before any significant further reductions in cost could be achieved.

## Cause of the problem

Nevertheless, many of the lines have recognised the root cause of their problems has been the introduction of much capacity, and one they have moved to cut it reducing their procurement new jets. It is significant many of the sales of the world-wide so far this year, by Boeing, have been to airlines in the developing countries, where air traffic is expanding faster than in industrial countries of the U.S. But even here, and in the U.S., airlines have felt the pinch, and recently had to defer their plan to introduce a new version of its basic 727 medium-range jet of lack of interest from "launching" customers. United Airlines of the U.S. has a similar problem—step increases in fuel costs, and many cases of airlines increasing fares in line with rising costs, but these are being resisted by passengers and airlines alike. The result is that airlines are resorting to term to fares which are most readily available, and are finding it difficult to profit for the world industry as a whole, within which many

## MEN AND MATTERS

## Merrill makes its mark

Merrill Lynch, Pierce Fenner and Smith, although the biggest stockbroking group in the world and affectionately known as the "thundering herd" has not always fitted comfortably in the bosom of the establishment. Earlier this year the U.S. Court of Appeals upheld a ruling that it was liable for damages arising out of a stockholder suit involving the use of inside information and at the beginning of this month charges were laid against the firm by the Equal Employment Opportunity Commission alleging discrimination in employment practices.

But the firm has also stirred up a hornets nest in its own spiritual home of Wall Street by threatening to inject yet another dose of unwelcome competition into the once cosy protected Wall Street brokerage structure. The first cold blast of competition came in May when the New York Stock Exchange abolished the system of fixed broker commissions, which resulted in a drop in the rate of commissions paid by institutions to around 40 per cent. of the previous level. Now Merrill Lynch is proposing to start its own odd-lot trading market.

Odd-lot trading covers any deal of less than 100 shares, and with much heavier share trading on Wall Street than in London this represents a bigger chunk of the market there than it does here. It is estimated that 3 per cent. of the total NYSE and American Stock Exchange business is done in odd-lot trading, but that is probably nearer 10 per cent. of non-institutional business.

Currently only one firm deals in odd-lot trading, and it big disappointment. A regularly elected port convenor for the past eight years, O'Donnell, 50, commented on the value of the work done by a

shares. Merrill Lynch is prepared to undercut that rate, and at least two other major brokers have said that they will follow Merrill's lead.

The conservative majority are worried that if Merrill Lynch goes ahead with this scheme it will only be the first stage in breaking down the system which is carefully constructed to protect the interests of brokerage houses, and the plan is vehemently opposed by the Association for Preservation of Auction Markets which represents establishment brokers.

The NYSE has so far postponed judgment but is widely expected to turn down the new scheme in spite of the Merrill Lynch threat that it will go ahead anyway and fight its decision through the courts. Meanwhile the smaller American Stock Exchange has approved the idea, in qualified fashion, stipulating, inter alia, that Merrill Lynch must not charge any premium at all on odd-lot deals. Since the rate on small deals does not attract the discounts which institutions can force, Merrill Lynch is, apparently, happy to accept this condition, which is one up for the small punter and one in the eye for its rivals.

## Cloth bowler?

The course of worker participation, like true love, does not always run smooth, and the sacking of Larry O'Donnell, as a port convenor by his shop stewards committee is a case in point. O'Donnell himself confesses that the situation at Felixstowe Dock and Railway which has arisen following his

I could not wear two caps. They wanted me to stay as convenor and to give me 100 per cent. backing as convenor, but to get that they said I would have to resign my directorship. I thought I could do both jobs well, but I have decided to stay on as a director because it is the policy of the Transport and General Workers' Union. The hours were then multiplied by the prevailing hourly rate which at Board level and this was a major step in the right direction.

O'Donnell, who has been at Felixstowe since 1959 and was previously employed on ship maintenance on Merseyside, insists that he will not be a staff man. Before the union fact that hourly rates in the situation blew up he had already waived the £1,000 a year fee which went with his directorship and maintains, "I want to keep my contact with the men."

In the time he has been at Felixstowe O'Donnell has seen it grow into the largest free enterprise port in the world. It has benefited from good labour relations and he blames the trouble at both Liverpool and London on their unfortunate industrial history and bitterness of the old dock employment systems. Although he favours the extension of the national dock labour scheme to the port, O'Donnell is opposed to the Government's plans in nationalised Felixstowe: "I don't know what body of men would be running me under nationalisation," he explains, "I would rather have a private enterprise set-up where I can talk on my own doorstep."

## Labour cost

I don't know who will be more upset by this note, husbands or wives, but the Social Security Administration has been doing some calculations on the annual value of the work done by a

U.S. housewife. The estimates are based on time and motion studies undertaken a few years ago by Cornell University which measured the time spent by a representative sample of housewives on each of their basic tasks such as looking after the children, cleaning, cooking, washing and so forth. These hours were then multiplied by the prevailing hourly rate which it would cost to get someone in the job to do.

The latest figures—upgraded for inflation—indicate that the average housewife is worth \$5,500, while younger wives weigh in at around \$2,000 a year more. Even disregarding the staff man. Before the union fact that hourly rates in the situation blew up he had already waived the £1,000 a year fee which went with his directorship and maintains, "I want to keep my contact with the men."

Later this month the U.S. based National Committee for Monetary Reform is holding a gold and monetary conference in Geneva. Speakers include Friedrich Von Hayek, and our own Enoch Powell, but even these names are overshadowed by the programme itself. One of the travel packages offered to U.S. money men includes: "transcendental meditation programme—prior to gold and monetary conference." Well I suppose these days we need all the help we can get—or maybe it's just that the organisers have had an advance look at some of the presentations.

## Scottish Development Agency

THE CHIEF EXECUTIVE

• THE Scottish Development Agency is being set up with initial resources of £200 million, with the twin objectives of accelerating the economic and industrial development of Scotland and of regenerating the environment.

• The Chief Executive, who will be a member of the Board, will have a leading role in this new organisation of vital importance to the future of Scotland. He will be responsible for the effective management of the Agency, including the development of overall strategy; for the formulation of projects and for their subsequent implementation.

• PROVEN ability in top management, preferably in industry or a closely related field, and demonstrated capacity to organise and control a large organisation, are the prime requirements.

• SALARY will reflect the importance of the appointment.

Write in complete confidence to  
A. Barker as adviser to  
The Scottish Office.

TYZACK & PARTNERS LTD  
12 CHARLOTTE SQ. • EDINBURGH EH2 4DN  
and  
10 HALLAM STREET • LONDON W1N 6DJ

Observer



# FINANCIAL TIMES SURVEY

Monday, September 15 1975

## EUROPEAN OFFSHORE TECHNOLOGY

With the gas piped into homes and factories and the first oil ashore, some of the glamour and excitement has inevitably faded from the North Sea scene. But the huge and continuing operation of search and exploitation will remain of outstanding significance for many years to come.

AFTER A decade of active and at times astonishingly successful exploration, the North Sea is at last beginning to mature. This summer has already seen the first oil landed from the U.K. sector. The next few months should see the first pipeline oil deliveries with the start-up of the Ekofisk-Teeside line, while not long after the giant Forties Field off Aberdeen should start delivering its oil to Cruden Bay near Peterhead.

Natural gas development, which saw the start of it all with the major discoveries off the eastern coast of England, is now enjoying a new lease of life with the production programme now in train for the Frigg Field off the Orkneys, the development of a number of gas finds in the southern sector of the North Sea, the announcement of plans to produce from the Kinsale Head discovery off Cork in Eire and the development of major associated gas reserves both at Ekofisk off Norway and at Brent off the Shetlands.

And with this push by exploration into deeper and more difficult waters has come an even greater technical push to produce the facilities and designs through which the oil and gas found can be exploited. This year has seen the successful placing of the first three producing platforms of concrete design—two oil facilities at Beryl and Brent and a gas facility at Frigg. As the industry absorbs this experience, already it is developing the equipment for the next leap into sub-sea completion and sub-sea systems tied to floating production platforms. At Beryl, Mobil has now installed the first deep-water sub-sea completion. At Magnus to the north of the Shetlands, BP, in association with CJB and SEAL, are planning one of the world's first deep-water field development schemes.

For the Europeans, too, the burst of exploration and development activity on their own doorstep has provided an unequalled opportunity for contractors, engineering and other companies to become involved in a market previously dominated almost exclusively by the U.S. offshore industry. Some like the Dutch contracting and supply boat companies became involved from the very early days of oil and gas in the world may years. Others have become involved more recently with the recently opened up a round of oil developments further North. But out of this activity has been produced a construction and design expertise, particularly in the deep water Porcupine Bank Basin to the West. The first drilling has started in the Western Approaches made Europeans pioneers in the technology developed in the Gulf of

field of concrete structures. A Mexico and elsewhere to the £700m. Shell/Esso's estimated costs on developing the oil and associated gas at Brent have now risen to around £1.5bn. and B itain, to the previous facilities had constantly to be revised in the light of new construction and contracting. In studies and experience. Man- electronics and in the field of power and equipment were submersibles, British companies stretched beyond their avail- have in some ways led the field, ability. The problems of while in the areas of pipelaying "weather window" and more advanced designs of installation work and

difficulties of gearing up the on-shore infrastructure for such a massive task were under- estimated. And all this in turn served to intensify the severe problems of capital cost escalation which hit all parts of the process and manufactur- ing industries last year. Costs per barrel of production capacity in the North Sea soared, at an unprecedented rate with steel going up more than 50 per cent, day rates for contracted equipment doubling and the installed costs of platforms rising by as much as 150-200 per cent.

Where original estimates for BP's Forties Field, for example, put total costs at some £300m, by last year this had gone up to over £500m, and, on the latest estimates on a project which will still not be com- pleted until 1977, the costs are more likely to be in the region

of £700m. Shell/Esso's esti- mated costs on developing the oil and associated gas at Brent have now risen to around £1.5bn. and B itain, to the previous facilities had constantly to be revised in the light of new construction and contracting. In studies and experience. Man- electronics and in the field of power and equipment were submersibles, British companies stretched beyond their avail- have in some ways led the field, ability. The problems of while in the areas of pipelaying "weather window" and more advanced designs of installation work and

At the same time the political repercussions of successful oil discovery, so often experienced elsewhere but surprisingly little suspected by the oil industry working in the "secure political environment of Europe," have also been felt with increasing force. The dramatic quadrupling of world oil prices over 1973-74 strengthened the growing feel- ings among European Govern- ments that they had given too much too quickly in their licence allocation. New fiscal rules have been produced in both Norway and the U.K. which, while containing considerable compromise from initial pro- posals and still leaving operators active. The number of rigs with existing fields a far from operating in the North Sea, once expected to number 60 at

have taken much of the edge off original profit expectations by the companies, particularly so far as new exploration for necessarily less attractive pros- pects is concerned. The Norwegian Government, faced by the prospect of a mas- sive development which would for new platforms for installa- tion in 1977 and beyond have talled off dramatically. And this has happened just as Euro- pean companies have made themselves ready to take part in the boom which reaped such large profits for many contrac- tors last year. The Norwegian contractors have no orders at all for completion after 1976. British contractors, encouraged by the Government to enter the game, now face the distinct prospect of a surplus of con- struction sites as the number of expected new orders dwindles. There is a large and growing surplus of rigs just as the Norwegian shipowners have gone heavily into this sector. In the supplies and marine con- tracting fields, companies are worried about new orders.

Whether the worst is now over and whether investment confidence is now about to return is the question now dominating and puzzling all who are involved in offshore developments in North-West Europe to-day. The signs are mixed. In one sense there seems little chance that atmos- phere or pace will ever return to the heady days of two or three years ago. Such a pace was probably always beyond the capacity of industry and the countries around the North Sea. and in the future, as the oil companies push exploration into more difficult waters, the rate of development will probably have to be limited more nearly to

this time, has in fact peaked out at less than four dozen and, unless given a new lease of life, is likely to fall sharply next year. While expenditure on development is running at record levels of over £2bn. a year throughout the North Sea at present, forward orders for new platforms for installa- tion in 1977 and beyond have talled off dramatically. And this has happened just as Euro- pean companies have made themselves ready to take part in the boom which reaped such large profits for many contrac- tors last year. The Norwegian contractors have no orders at all for completion after 1976. British contractors, encouraged by the Government to enter the game, now face the distinct prospect of a surplus of con- struction sites as the number of expected new orders dwindles. There is a large and growing surplus of rigs just as the Norwegian shipowners have gone heavily into this sector. In the supplies and marine con- tracting fields, companies are worried about new orders.

Whether the worst is now over and whether investment confidence is now about to return is the question now dominating and puzzling all who are involved in offshore developments in North-West Europe to-day. The signs are mixed. In one sense there seems little chance that atmos- phere or pace will ever return to the heady days of two or three years ago. Such a pace was probably always beyond the capacity of industry and the countries around the North Sea. and in the future, as the oil companies push exploration into more difficult waters, the rate of development will probably have to be limited more nearly to

the ability of the financial institu- tions, the industry and society to digest it. Nor, should it be added, is there any real sign that Governments any longer wish such a pace, with all the problems it brings. This fact may be difficult for companies, particularly the smaller ones, to accept but it is probably true none the less. And yet the current gloom ex- pressed in some quarters is almost certainly overdone. The fact remains that Europe badly needs the oil, that the current economic climate makes it all the more important for countries even like Norway to ensure a continuous pace of activity, that world oil prices look likely to remain at a high enough level to justify offshore development and that the re- sources are there. Some of the problems of the past year or so can be ascribed to the shortages of equipment and the "learn- ing curve" of oil companies and contractors alike and these at least seem likely to become less intense rather than more with time. Other problems, such as the financial difficulties and re- strictions of oil companies and banks, should be helped by oil production and the cash flow it brings with it.

After all the doubts and dif- ficulties of the last year, it is the actual flow of oil that is needed and what is at last beginning to emerge. If some of the spirit of bonanza has gone out of the scene, that need not be greeted too gloomily. When all is said, the development of oil and gas offshore North-West Europe remains one of the most exciting and important develop- ments to occur in Europe in the last 20 years. And it is likely to remain that for a generation at least to come.

## The frontiers push out

By ADRIAN HAMILTON

# Capper Neill

A special group of engineering companies, all in the process plant industry. All complementary. All growing. All pacesetting. All successful. With many active on North Sea projects both 'off shore' and 'on shore', fabricating nodes, pile guides, oil legs and

platform modules. Building the biggest tanks in Europe to collect the oil, installing the pipework to convey it and making the columns to refine it. The newest company in the Group, Aqua Logistics manufacturers and supplies sophisticated saturation deep sea diving systems. Capper-Neill Ltd is a public company, quoted on the London Stock Exchange, with headquarters in Warrington.

On stream  
On time  
with Capper-Neill  
On site

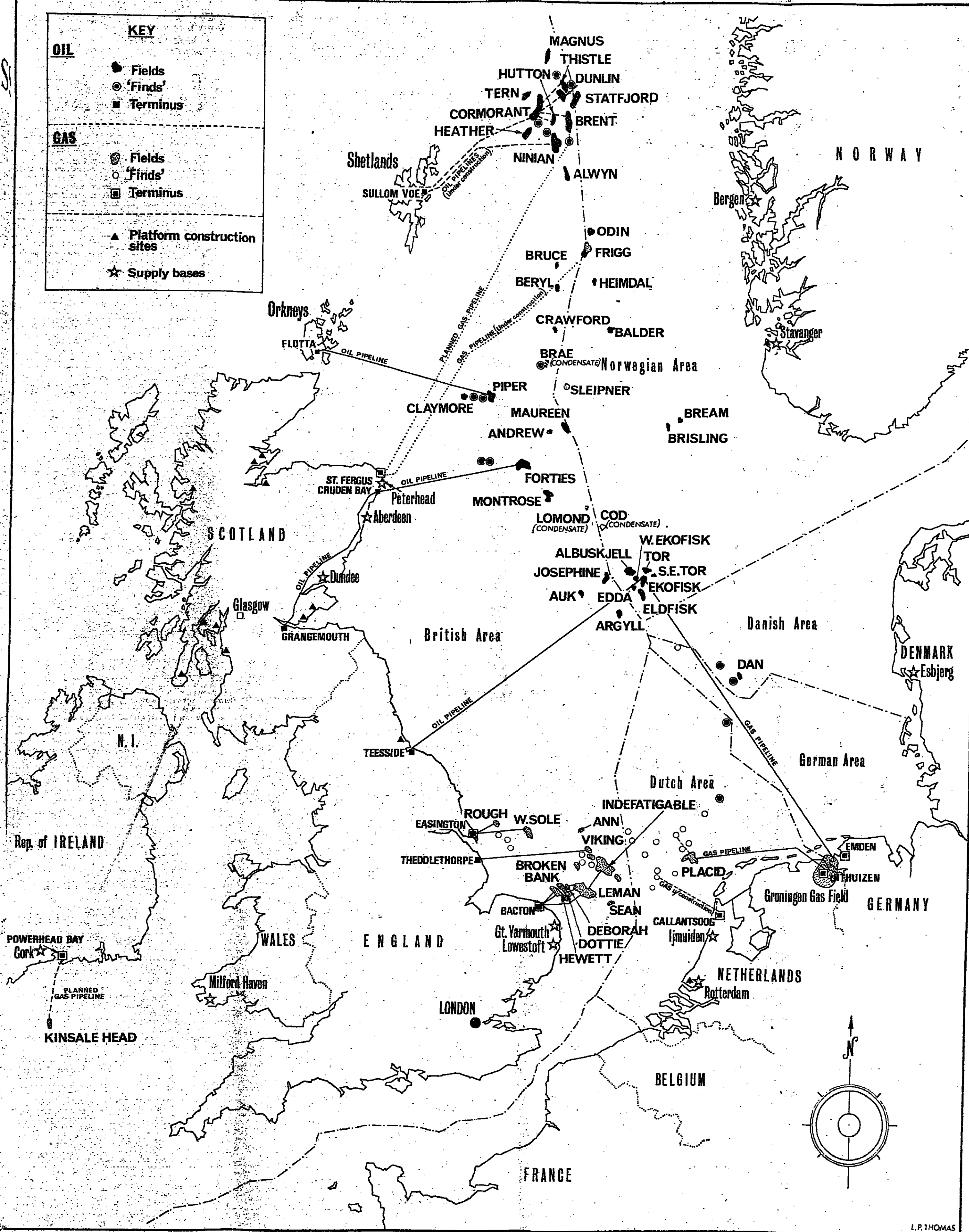
- |                                |  |  |  |   |   |   |  |  |  |                                    |  |   |  |  |   |
|--------------------------------|--|--|--|---|---|---|--|--|--|------------------------------------|--|---|--|--|---|
| Applikon & Howard Ltd<br>Pumps | Applied Research & Engineering Ltd<br>Process Design | Aqua Logistics (International) Ltd<br>Saturation Deep Sea Diving Systems | Capper-Neill Controls Ltd<br>Instrumenting Equipment | Capper-Neill Industrial Products Ltd<br>General Fabrication | Capper-Neill International Ltd<br>Storage and Process Plant | Capper-Neill Process Ltd<br>Technicians Fabrication | Capper Pipe Service Co Ltd<br>Support and Plant Installation | Capper Pipe Service Co (Ireland) Ltd<br>Process and Plant Installation | William H. Capper & Co Ltd<br>Pipework Fabrication | Joseph Hughes Ltd<br>Tape and Dies | M. Morris & Co Ltd<br>Refrigerated Pumps Fabrication | Wm. Neill & Son (St. Helens) Ltd<br>Fabrication | OPL Instrumentation Ltd<br>Instrumentation | UD Engineering Co Ltd<br>Boiler Washing and Filing Machinery | UDEC Refrigeration Ltd<br>Refrigeration Plant |
|--------------------------------|--|--|--|---|---|---|--|--|--|------------------------------------|--|---|--|--|---|







هكذا من الأصل



L.P. THOMAS

CONTINUED FROM PREVIOUS PAGE

## Netherlands

DEVELOPMENT IN the Netherlands has been over-aver, has seen activity pick up adowed in the last five years, considerably partly because a sizeable number of smaller d more by the oil discoveries. accumulations have now been rther north, the failure to established capable of joint de d the major gas accumula- velopment, partly because the ms that had been predicted tise in energy forces has made now under construction are the lowing the discovery of the small gas fields economic development of the Placid Field at L/10 through a 175km pipe- sive Groningen offshore partly because two pipeline pro- id and by the limitations on fects are underway with capa-

city to take in additional finds and partly because the country, start to construction of the offshore Netherlands to be de- field with 16 km. connection 120km pipeline by Pennzoil to veloped. Placid's L/10 and L/11 with the Placid line for start-up K/13, K/14, and K/17. But operations is clearly not equal which was the first to insist on take in finds in the K areas to reserves are contracted to de- next year or early 1977. Petro- other finds in this region by to that of the oil developments the CLOMS and other groups further north, the pressure on could be joined in at a later Holland to produce gas to make up the deficits caused by the decline in the Groningen Field over 30 gas discoveries off- from 1977 onwards and the high shore the Netherlands with re- price being paid for gas should serves of around 15 trillion ensure a steady stream of cubic feet, and development ordering small platforms at projects already committed will more than half-a-dozen a year probably involve the expendi- for some years ahead.

The two major developments both of which will have the capacity to take around 1,200m. cubic feet per day of gas to the for its L/7 gas discoveries con- sisting of the installation of a put from three fields discovered

near Delfzijl this year and the of small discoveries established four-platform complex on the by the Noordwinning and NAM ture of around 1bn. Dutch (Shell/Esso) consortiums at Florins. Although the scale of field with 16 km. connection

Construction of the two lines, gone ahead. To the north, the French-led Petroland group has produced development plans for its L/7 gas discoveries con- sisting of the installation of a put from three fields discovered

while the Noordwinning group is planning to be in its L/8 discovery. The Pennzoil line, meanwhile, is initially planned to take out projects already committed will more than half-a-dozen a year probably involve the expendi- for some years ahead.

The Pennzoil line, meanwhile, is initially planned to take out projects already committed will more than half-a-dozen a year probably involve the expendi- for some years ahead.

by the Noordwinning and NAM ture of around 1bn. Dutch (Shell/Esso) consortiums at Florins. Although the scale of field with 16 km. connection

The Pennzoil line, meanwhile, is initially planned to take out projects already committed will more than half-a-dozen a year probably involve the expendi- for some years ahead.

by the Noordwinning and NAM ture of around 1bn. Dutch (Shell/Esso) consortiums at Florins. Although the scale of field with 16 km. connection

The Pennzoil line, meanwhile, is initially planned to take out projects already committed will more than half-a-dozen a year probably involve the expendi- for some years ahead.

by the Noordwinning and NAM ture of around 1bn. Dutch (Shell/Esso) consortiums at Florins. Although the scale of field with 16 km. connection

The Pennzoil line, meanwhile, is initially planned to take out projects already committed will more than half-a-dozen a year probably involve the expendi- for some years ahead.



## Caterpillar Power for the Oilfield

your one safe source

### CAT DIESEL & GAS ENGINES

- ☐ Electric Power Generation
- ☐ Draw Works ☐ Mud Pumps
- ☐ Cranes
- ☐ Rig Service Vessels
- ☐ Workover Platform Services

### LEVERTON TOTAL SERVICE

- ☐ Technical Advisory Service
- ☐ Planned Preventive Maintenance
- ☐ Oil Analysis Sampling Programme
- ☐ Rig, Vessel and Platform Service Contracts
- ☐ Service Exchange Units
- ☐ 24 Hour Parts Service



Head Office: Maidenhead Road, Windsor, Berks. SL4 5HH. Telephone: Windsor 68121.  
A.B.C. Wharf, South Quay, Great Yarmouth. Telephone: Gt. Yarmouth 55344.  
Dunham Road, Birley, Co. Durham. DH3 2DE. Telephone: Birley 2653.

Caterpillar and related trademarks of Caterpillar Tractor Co.

## EUROPEAN OFFSHORE TECHNOLOGY IV

Not the least remarkable aspect of offshore development in Europe has been the rapid growth of a European-based offshore industry and technology. A look at some of the specific areas where this has occurred.

# Concrete platforms

IN THE CLOSING weeks of August the third concrete production platform to be located in the North Sea floated out from its construction site at Andalsnes in Norway on its way to the Frigg gas field.

This float out was a particular triumph for engineers at Howard-Doris (the platform designers) in that a decision was taken by the Frigg field operators only eight months ago to change the function of the structure completely. After the accidental damaging of the steel jacket designated DPI (drilling platform 1) it was decided to convert the semi-completed manifold platform (MPI) under construction at Andalsnes to a drilling platform. Design changes, although not radical, were enough to take the engineers back to the drawing boards while they worked out the best solution and still be inside the boundary of the summer weather window.

The float out on schedule has meant that the first "awkward bounce" thrown up at the planning of offshore concrete structures has been met successfully.

The only other concrete production platforms located in the North Sea so far are of the Condeep design (Beryl A and Brent B). Both of these are still being installed on their respective fields and it is far too early to make judgments on their resistance to northern North Sea conditions. But apart from minor problems with cracks in the concrete in the initial stages of construction of Beryl A both the pioneering Condeeps have been trouble-

free and building has proceeded to completion on schedule—a feat which has not been shared by the first large steel structures.

Although not a production platform there is one concrete structure which has been in the North Sea longer than 18 months—the Ekoisk 1m barrel storage tank. Designed by C. G. Doris of France the experience gained in the construction and float out of this tank probably counted for much of the insight behind the adaptation of the Frigg MPI. Whether that is true or not it is certain that one of the tank's main features—the honeycomb Jarlan wall, which helps to break down wave forces—has proved to be very successful and it is a major feature of the joint Howard Doris structure.

The designs already mentioned are in fact only two of at least 16 different configurations in concrete which have been offered in the last few years. All of them are basically the same—that is they have storage capacity in the base cells and the legs, while the deck is supported by three or four slipformed concrete towers.

### Site design

On the face of it there seems little scope for an oil company to make its choice and the first orders placed were probably influenced more by the reputation of the big concrete construction firms and by the thought of better delivery dates than could be gained from steel fabrication yards than they were by the knowledge

of the individual structures involved.

One of the most unusual aspects of concrete platform ordering is that the design cannot be easily separated from the site where it is to be built. In other words a contractor comes up with a design to suit a particular site. The method of construction adopted by all the designers is to lay the base slab and tray in a dry dock, then float it out to deeper inshore waters for completion. The Norwegian coast with its deep fjords is ideal for this type of construction and it is not surprising that the first orders went to the Condeep design of the Aker/Ellefsen/Selmer (Norwegian Contractors) group.

In the U.K. the west coast of Scotland has the only real prospect for the Norwegian coast and at Ardyne Point the Anglo-French McAlpine - SeaTank group won three orders (Frigg TPI, Brent C and Cormorant) in fairly rapid succession. An Anglo-Dutch group ANDOC secured one order (Dunlin A) for its site near Rotterdam in the Netherlands, but probably the most versatile in terms of construction sites has been the other successful Anglo-French partnership—Howard Doris. This latter group has orders at three sites around Europe: Loch Kishorn (Scotland) "building" Nipian A, Andalsnes (Norway) which has just completed Frigg DPI substitute and Stromstad (Sweden) which is also building a Frigg platform.

There have been no further orders for these four designs in 1975 and certainly there has been no attempt from the oil

companies to go for any of the other dozen which are being offered—some of them with sites at the ready.

With the first orders now being completed there are spaces available in the yards which have experience in construction of offshore platforms and it is likely that most of the oil companies will want to take advantage of this experience when placing any new orders. Anticipating this desire the U.K. Government has said that any new orders for the U.K. sector must be placed in Britain so that companies like Sea Platform Constructors at Portavadie, Caledonian Platform Structures at Burntisland, John Laing at the Forth, ANDOC at Humberston, Taywood Seltrist at Alass and TWC Mowlem at Cambeltown have a chance of sharing the platform market.

During 1974-75 there has been a definite slump in the North Sea activity, especially in the U.K. sector. Part of this stems from the oil company reticence in committing large sums of money to set up production facilities in fields which the companies believe have been made form designs. These are meant, doubtful economically for the recent Government policies. A concrete production platform with deck and facilities for 500 feet water depths can cost in the region of \$60m. (and the cost is rising) and no company is going to commit that amount of money without a clear indication of some return at a later date.

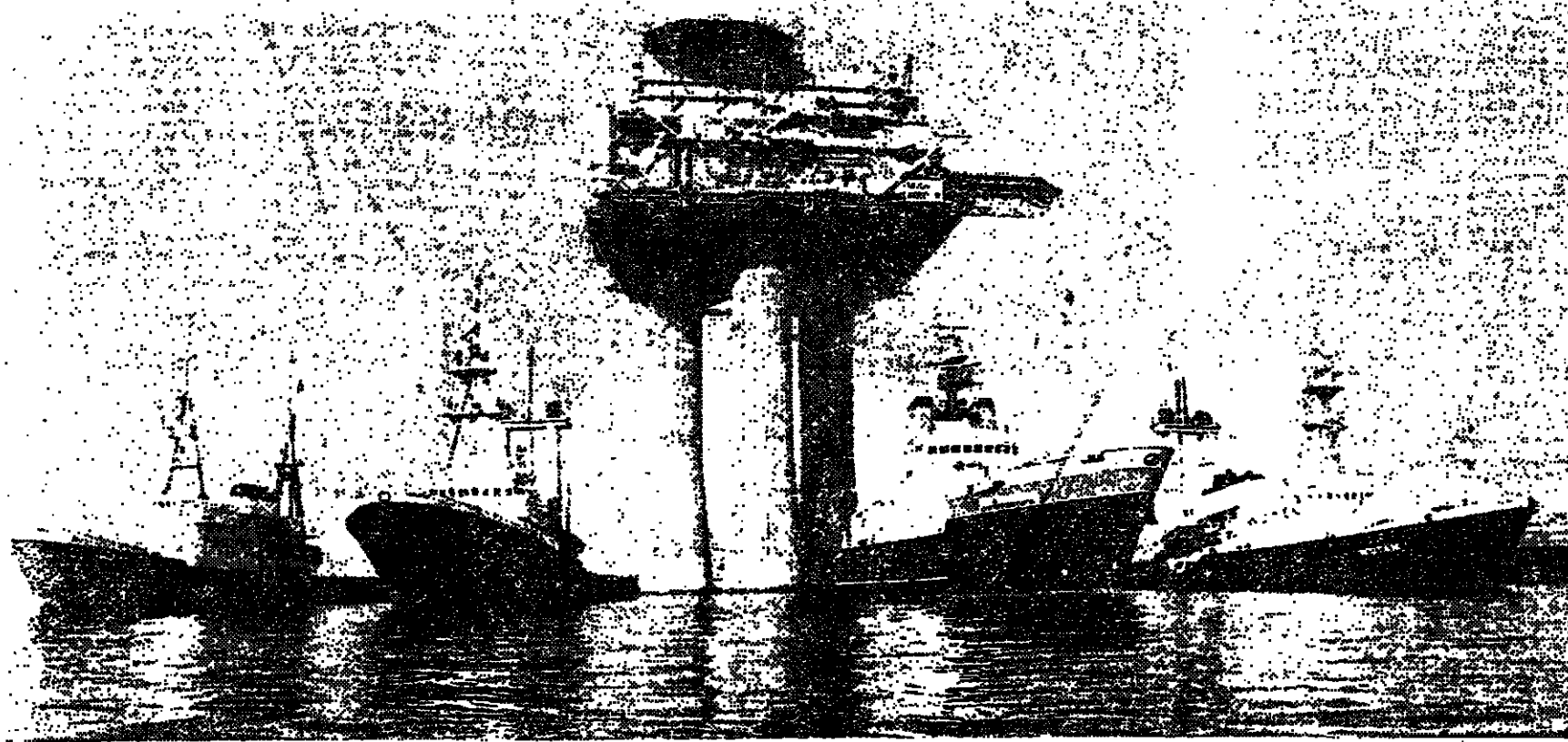
The choice of platform for a particular field is not just a matter of economics. Bottom conditions at the proposed site are extremely important and in

all cases the designated area must be approved by the relevant certifying authority and the insurance surveyors. The choice of steel or concrete must be made early in the field development planning and depends on a number of factors. One of them is the condition of the seabed at the proposed site so a detailed sea bottom survey is needed fairly early in the planning.

This survey includes a map of the topography of the ocean floor and soil sampling for strength testing. The general rule of thumb is that if the site has a very thick section of soft bottom mud the best plan is to choose a piled steel platform. If the seabed is close to the surface and piling would be more difficult, but the site would probably support a concrete gravity structure. The concrete platforms do have skirts and short pins on the underside of their base slabs which penetrate the sea bed to counteract any tendency to slumping caused by scour.

There are several Norwegian companies looking into the future with their concrete platform designs. These are meant for a world wide market. A deep ocean environment. Two of them—Big Buny and Consub—are floating platforms, but the third (Selmer Tripod 300) is designed as a gravity structure for 600 feet water depths. Selmer has already carried out successful inclined slipforming tests, an important part of the design programme, and the company is confident the proposition is viable.

**Rick Wilkinson**  
Offshore Engineer



North Sea, Inc. is proud to be a partner in the group which put the world's first Condeep platform in the British Sector of the North Sea to expedite oil production.

## What we're doing to bring you more energy from the North Sea.

We are North Sea, Inc.

We're named for the tough challenge we accepted more than 10 years ago—to help bring Great Britain the North Sea energy that is so near, yet so hard to get. Here are some of the things we're doing:

### 1.

In partnership with British Gas/Amoco we are supplying roughly 1/3 of the country's natural gas. This group also expects to begin oil production from the Montrose Field next year. In partnership with British Gas/Mobil we are developing the Beryl oilfield, where the world's first Condeep drilling-production-storage platform was set two months ago.

### 2.

Last year we participated in drilling 37 wells in the U.K. sector of the North Sea; 25 found gas or oil. We are

continuing with substantial exploratory drilling this year and have three fields in the initial development stage.

### 3.

Our company managed the design, engineering and construction of the modern plant at Bacton which processes gas from the Leman and Indefatigable fields. The British Gas/Amoco Group's share of gas from these fields supplies about one billion cubic feet of gas daily.

### 4.

We helped pioneer the challenging underwater pipeline techniques used in the North Sea by participating in the design of some of the first pipelines bringing gas to the U.K.

We had the resources and expertise to do it, because we're a subsidiary of Texas Eastern, a company with more than 28 years' experience in the energy business.

We look forward to continuing our role in serving Britain's energy needs.

## North Sea, Inc.

A Texas Eastern Subsidiary  
6 Curzon Place  
London W1 England

## Slack demand for drilling rigs

THE OFFSHORE drilling rig bubble has burst. The first cancellations of rig building contracts have occurred, no new orders have been placed for months and rig charter rates have fallen to almost half the level reached last year. The question nagging most rig owners and contractors is whether the present situation represents only a temporary setback or whether the enthusiasm for offshore rigs which blossomed in 1973 has produced a surplus of platform buildings that demand will be able to absorb only in the longer term.

In the meantime rig technology is also marking time. Builders are holding back on new designs, until the market recovers sufficiently to make series production profitable. In August some 280 rigs were at work in offshore waters, 16 were either en route or idle and new orders had been placed for 155 jack-ups, semi-submersibles and drill ships. Most new buildings had no contracts. The position is most serious for the Norwegians, who were the first to challenge the American hegemony in the offshore field in 1973 and 1974 and who built on speculation, introducing shipping practices to the offshore business.

The French, who have been more modest, are currently in a much better position. Their present fleet of semi-submersibles and drill ships, including the "Pelican", one of the first two commercial drill ships with dynamic positioning, are all working and they have few new buildings ordered. A sister ship to the Pelican, the "Pelerin", under construction at Rotterdam, is one of the few new buildings to have obtained a charter recently: it has a three-year contract with Total.

The plunge into the rig market by Norwegian shipowners was based on the calculation that between 600 and 700 offshore drilling rigs would be needed worldwide in the 1980s, but the slackening of activity in the North Sea, partly as a result of Norwegian government conservation policy and taxation changes by both the Norwegian and British Governments, has not been compensated by an increase in exploration elsewhere. The crude surplus, uncertainty about oil price developments and the rising cost of exploration have all contributed to a more cautious approach worldwide.

According to a compilation by Fearnley and Eger's chartering company, 20 rigs had been delivered to Norwegian owners equally to the rigs. The Aker group, which designed the most successful of the new rigs, the H-3 semi-submersible, is Norway's biggest private employer

and has already been badly hit by tanker cancellations. One drill ship conversion has already been sold to a French owner.

Aker policy for the time being is to keep its offshore engineering capacity intact and to wait for the market recovery. Although orders have been placed for 28 Aker H-3 rigs, of which 14 are being built under licence in other yards, Aker itself has so far delivered seven and the last rig on order is due for delivery in the last quarter of 1978.

Aker executives are confident of their competitive ability once the market revives. The group introduced an entirely new concept to offshore contracting, when it started to offer complete rig packages, including both hull and drilling equipment, and accepted contract responsibility for the entire vessel in contrast with previous American practice, in which the yard produced the hull and the contractor was responsible for the equipment. This complete package offer, Aker believes, can have a greater appeal for the new countries entering the offshore business, where government involvement is often greater and the desire to retain as much national control as possible is strong.

But, as long as the current hiatus prevails on the market, the question of what technology will be needed, when the upturn comes, remains wide open. Aker got no response to its H-4 design introduced at Houston two years ago and decided that it had been too early with a deep-water rig. It has since developed the H-5, a smaller, cheaper design, incorporating some of the H-4's technical innovations, which can be adapted for dynamic positioning.

The Norwegian rig owners are not optimistic about prospects for 1978 but they believe those who can survive financially will find work for their rigs towards the second half of 1977, when the new H-3s should prove to be superior to the older outdated rigs. Rig owners' eyes are turned to the U.S. and the prospects for the opening up of the eastern continental shelf, which could, it is argued, at least lead to the withdrawal of some American rigs from the North Sea, allowing more opportunities there for European rigs. Hopes are also attached to the expansion of exploration in Far Eastern and South American waters, but too little is so far known about the types of rig that will be able to operate most economically there.

**William Dufforce**  
Nordic Correspondent



# Fewer orders on marine side

IT IS in the field of marine contracting—the operation and ownership of rigs, derrick barges and pipe-laying vessels and the provision of the whole array of tugs and boats associated with the installation of platforms and the laying of subsea pipelines—where the strains of excess demand have been felt most intensely in the last year. It is in this area where European industry has been in some ways slowest to launch its own challenge. And it is in this area too, where the sudden downturn in future ordering has perhaps the greatest degree of threat to the set the new entrants as well as

their longer-established competitors. Whereas the exploration rig sector is unquestionably suffering from a serious over-supply of vessels at the moment, however, it remains a delicate question as to whether this will be the true of the other sectors of the business such as platform installation and pipelaying work. Perhaps because of the higher costs of some of the equipment required—a new-generation pipelaying barge, for example, can cost well over \$100m.—and perhaps because of the greater degree of skills and experience needed by the contractors, these

areas have never attracted quite the same degree of speculative investment as have exploration rigs. Nor has the pattern of European involvement been quite the same. In the field of platform installation and the provision of pipe supply vessels and tugs, European companies, and particularly the Dutch with their long experience of offshore engineering, have taken an active part from the start. Companies such as IHC, Netherlands Offshore, Heerema Engineering and Smit International of Holland as well as other groups from Britain, France and Germany have carved out a

substantial share in certain sectors of this market and have held on to it. Nevertheless, the downturn in demand could have serious repercussions. After a slow start, European finance and contracting expertise have taken a strong position on the new generation of pipe-laying barges through the ETPM, Saipem and Viking barges. British and Norwegian finance is involved in several projected crane ships and contractors from both sides of the Atlantic with combined lay and derrick barges are jostling for work in both opera-

tions. The most sensitive area at the moment is probably in the field of platform installation, which is particularly vulnerable to the current downturn in the future ordering of platforms and is made even more sensitive by the considerable differences in installation requirements between steel platforms, needing as much as six months or more to pile and instal the decks, and gravity platforms, where the installation requirements, if the modules are largely fixed in-shore, may amount to little more than a month.

At present there are a dozen and a-half barges of both com-

binced and simple derrick type capable of undertaking installation work, the majority owned by Brown and Root, J. Ray McDermott and Heerema Engineering. But a further half-dozen or more are now under construction, including several ordered by the Netherlands Offshore group. Against this, the actual amount of installation work looks like peaking next year, when delays in construction originally destined for this year should boost the figures considerably, and is likely to fall substantially in 1977.

Many of the oil companies have gone for concrete platforms, requiring less installation work, and while the Ekofisk group of fields will still require continuous operations for several years, the work load in the southern sector of the U.K. North Sea is declining and new orders are well short of expectations in the northern North Sea. The number of barges required for installation work may well rise next year, therefore, to perhaps a dozen, but thereafter could well fall back to ten or less, suggesting that unless a very substantial boost indeed is given to development some of the barges now in operation will have to seek work outside of North-West Europe.

The extent to which the demand for pipeline construction can counterbalance any drop in demand for platform installation work, especially by using combined barges, is still questionable. A basic part of the pipeline work, the tying in of lines to platforms on the field itself is, of course, as sensitive to any drop in platform demand as installation work is. But the demand for large-diameter pipe-line construction does look reasonably buoyant over the future. After the hectic and somewhat prolonged years of pipeline work on the Ekofisk and Forties fields, work has now started on the laying of both the Brent and Ninian oil lines to Sullom Våg in the Shetlands. Construction of the order steel or concrete platform double pipeline system from Frigg to St. Fergus is likely to continue through next year at least, while the Brent gas line in the same direction should be started next year also.

But for the moment, the downturn in ordering is posing some awkward questions of whether the greater productivity of the new generation lay barges can compensate for their higher daily rates, whether combination barges can compete with derrick barges for installation work and whether contractors are better moving vessels out of the North Sea or keeping them in Europe waiting for better days. As in so much of the offshore market, the field of marine contracting does not encourage new construction or new entrants. Nor does it encourage those who do not look to the world as their field of activity.

theoretically of laying as much as 60 miles of pipe per season

## Busy traffic in supplies

SINCE THE earliest days of offshore exploration one of the central problems has been that of supply. It is not possible to set up a rig or a platform in an operating area and then leave it to fend for itself through a self-sufficiency of supplies for weeks on end. In order to accommodate all the equipment services to complete the facility would have to be very much bigger and it would still be necessary to face the supply problem when stocks ran out. There would also inevitably be the emergency item needed suddenly and unexpectedly.

As a result of the huge logistics requirements of an offshore operation, particularly in the exploration stage, a system of regular supply by sea and air has become general practice, and of all the new and fast growing industries established around the world to support areas of operation like the North Sea, it has been said that supply and service is one of the most innovative and one of exceptionally rapid growth.

The range of materials, apparatus and provisions needed to maintain an offshore installation covers everything from basic drilling equipment such as drill pipe, casing, tubing, drill collars, chemicals, drilling mud, water, and tools through to more general supplies such as food, fresh water, fuel and clothing. Add to this the initial extra burden of construction equipment and material during the early life of an installation, and the number of men that have to be moved around to keep it running 24 hours a day all the year round, and the scale of the problem—and the achievement—can be better understood.

This basic supply problem exists wherever there is an offshore installation, but in the North Sea the potentially appalling weather is always liable to disrupt schedules and make special demands on vessels, aircraft and crews. Apart from obtaining the supplies themselves—and on many items there are extended delivery dates and transport problems—it is necessary to set up special dock facilities, design custom-made vessels, train crews in the particular skills involved, and set up a huge administrative machine to run the whole business.

Although the needs of a production platform in supply terms are much less than those of an exploration rig, with the exception of the setting up of the supply problem can be gauged from the supply needs of an exploration rig. About 3,000 tons of material is needed during a 90-day operating cycle, and a company involved in, say, a five rig programme, will have to move about 100,000 tons of supplies in 12 months.

Placed like Aberdeen have risen to the occasion remarkably considering that it all happened so quickly and was in such contrast to previous experience. A few short years ago Aberdeen based its economy on the fishing on one side, its agricultural hinterland on the other, and some whisky in between. In little more than five years the place has been transformed and all the companies that moved in early to take advantage of the expected boom talk of their growth in terms of trebling or quadrupling in that time. Even with all that has already been done the projected developments in and around the harbour are worth some £14m, despite talk of a "slowing down" in activity.

Typical of the companies that have enjoyed great growth by providing a reliable 24-hour service is the Aberdeen Service Company, with bases at Peterhead, Dundee, and Aberdeen. The company says quite simply that it will supply anything needed, and offers entry to its Peterhead facility at any hour in any day, throughout the year. Mud/cement, fuel and water are ducted direct to joining their fleet later this

year, with a further two S-61N's on order.

BA Helicopters also has a financial stake in Nordsee Helicopters, operating out of Wilhelmshaven with two S-61N's, and at that location Nordsee is in competition with another prominent North Sea operating company, Helikopter Service, a Norwegian company with its main base near Oslo.

Whether supply is by sea or by air, nowadays the rig or platform has many companies eager to provide the round-the-clock, all-conditions service that is so vital to viable operations in offshore areas. What is remarkable is that in such a short time

not only has a huge new industry been created, with base facilities to match, but it has reached a level of efficiency that makes it one of the most reliable elements in the whole business. Intense competition is one of the key factors in this.

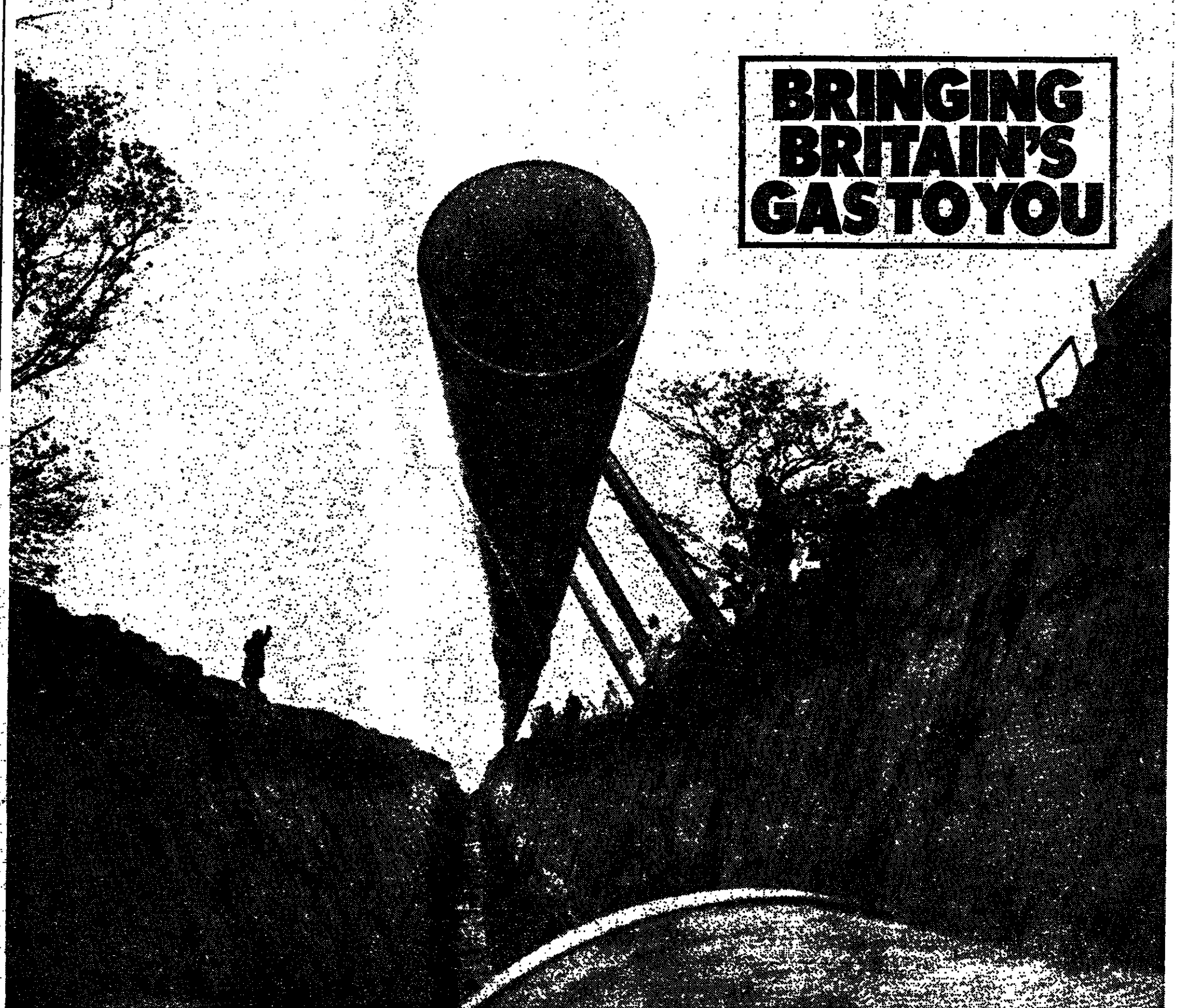
Hugh Colver

The extent to which the

### Productivity

The question overhanging the pipeline business at the moment is less the number of barges which may be required than the impact of the third-generation barges, several of them with the capacity to handle double-jointing, will have on productivity rates. There are now five of the third-generation barges under construction or in action, including the two ETPM-operated barges, the Viking and Root barge and a barge ordered by Exxon. Capable of theoretically laying as much as 60 miles of pipe per season

Adrian Hamilton



**BRINGING  
BRITAIN'S  
GAS TO YOU**

## Buried Treasure!

The massive programme to increase Britain's supplies of natural gas is now well under way. The first stage of the long underground journey across Britain, which natural gas from the North Sea Frigg field will make to reach our customers, is a 170 mile stretch from St. Fergus in north-east Scotland to Bathgate, between Glasgow and Edinburgh. This section of 36 inch high pressure pipeline will involve the crossing of 409 roads, 41 rivers and 13 railways. It's a big job bringing natural gas to Britain. But it's worth it, because natural gas is Britain's most precious natural asset. North Sea oil is a promise for the future, but natural gas is now supplying 30 per

cent of the nation's useful heat. And by 1980 this could rise to 40 per cent.

Natural gas is good news for Britain.

- Because:
1. It is British\*—an indigenous fuel under our own control.
  2. It is saving one thousand million pounds a year on our balance of payments and makes us less dependent on imported oil.
  3. It is a pure form of energy which does not harm the environment.
  4. It is highly efficient—it comes direct to the customer with virtually no waste.

\*And gas from the Norwegian part of the Frigg field will also be coming to Britain.

NATURAL GAS—TOO GOOD TO WASTE



BRITISH GAS  
Our Vital Industry

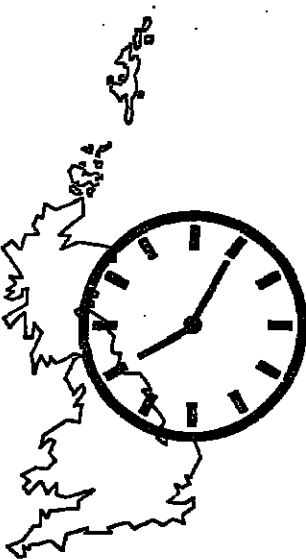




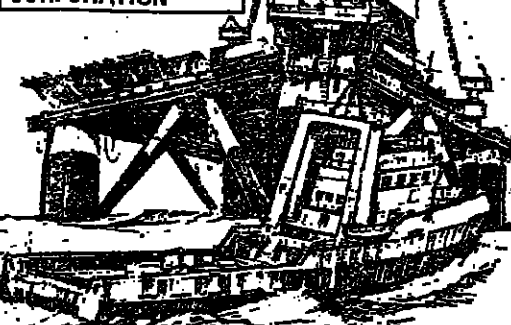
# Peckston Services to North Sea Operations

- OFFSHORE CRAFT-CHARTERING & OPERATIONS
- CUSTOMS CONSULTANCY
- AIRFREIGHT
- FREIGHT FORWARDING
- AIRCRAFT & HELICOPTER CHARTERING
- WAREHOUSING
- SHIP AGENCY
- TRAVEL
- EXPRESS DELIVERY SERVICE
- STEEL FABRICATION & ENGINEERING
- ROAD HAULAGE
- HEAVY LIFT SHIPS, BARGES, FLOATING CRANES
- TECHNICAL CONSULTANCY
- CREW MOVEMENTS & CONTROL
- WIRE ROPE & LIFTING GEAR

A comprehensive transportation service operating round the clock



Scottish Agents for EMERY AIR FREIGHT CORPORATION



**Peckston Group**

ABERDEEN, LEITH, PRESTWICK, NORTH SHIELDS, HARTLEPOOL, MIDDLESBROUGH, HULL, INNINGHAM, GRIMSBY, LONDON.  
Head Office: Dundas House, Dundas Street, Middlesbrough Cleveland TS1 1HZ Tel. 0642 45141 Telex 58534 Telegrams 'Jayped' Middlesbrough.

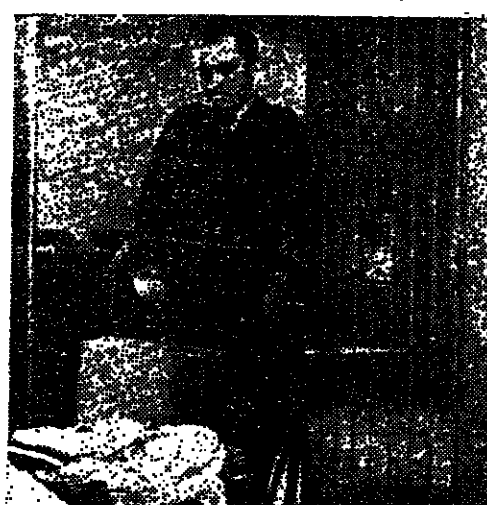
## SECURICOR serves Scotland

from its network of security centres

...with cash carrying, wage packeting, property guarding, radio patrols, security delivery, intruder alarms and many other services for industry and commerce.



Radio Control



Vault Storage of Cash



Industrial Property Guarding

Securicor Centres at: Aberdeen, Alexandria, Arbroath, Berwick, Carronshore, Cumbernauld, Dalkeith, Dumfries, Dundee, Edinburgh, Elgin, Glasgow, Glenrothes, Greenock, Harthill, Invergoron, Inverness, Kilmarnock, Kilwinning, Lerwick, Livingston, Longman, Motherwell, Oban, Paisley, Perth, Peterhead, Prestwick, Rutherglen, Selkirk, Stranraer, Stronness, Wick.

Contact your nearest branch or telephone one of the numbers below.

**SECURICOR**

Securicor (Scotland) Limited  
Glasgow Tel: 041-221 8561  
Edinburgh Tel: 031-332 7711

# Platform equipment

THE U.K. Government has made it plain enough over the past two or three years that it wants to see British companies taking a much larger share of the market for platform equipment connected with the North Sea efforts. After all, the argument goes, much of the equipment is the same as (or a simple modification of) that produced for on-shore plant. The Government and the Offshore Supplies Office have been pushing from both directions to achieve its objectives in this area—prodding both the oil companies which are the customers and the U.K. industrialists who are the potential suppliers.

It is less than a month ago that Mr. Anthony Wedgwood Benn, the Energy Secretary, made the latest overt move of this kind. He released the text of a letter to the major oil companies in which he urged them to bring forward their orders for offshore oil and gas platforms.

One of the arguments used by Mr. Benn, when he put the pressure on, was that the companies should speed up their development plans, or they Oil and Gas: A summary of their platforms built if they during 1974.)

The U.K. Government knows and the U.K. content was about 70 per cent. The whole question of rules.

for British contractors to get the platform orders because the country which builds the platform is usually asked to provide the equipment to go on it. So Mr. Benn is determined that Britain's platform-building capability should not be weakened because of an uneven pattern of new order placing. There is no doubt, either, that he is far from satisfied with the 40 per cent. share of the platform equipment market that the U.K. manufacturers have captured so far. The Government had hoped that by this stage it would have been much nearer 50 per cent. and continues to look for British industry getting up to that level—or perhaps to 55 per cent. of the market—by the end of this year.

A clear picture of the way things developed last year has been produced by the OSO, which made an analysis, with the assistance of the Department of Energy, of the major orders for equipment and services placed during 1974 by companies operating oil and gas fields on the U.K. Continental shelf. (It was published in booklet form by HMSO, and called Offshore Development Plans, or they Oil and Gas: A summary of their platforms built if they during 1974.)

Total orders placed in 1974 amounted to just under £1.3bn. The U.K. content was about 70 per cent. The whole question of rules.

OSO pointed out, however, that there are some sectors of the market where the U.K. at present has little or no capability. If these are excluded the U.K. content was 55 per cent. Moreover, when allowance is made for areas in which capacity existed but was already committed, then the U.K. content of orders placed where capability and capacity was available could be as high as 70 per cent.

The survey showed that U.K. companies were most successful in winning orders for capital goods and in some areas (such as process plant and electrical equipment) have secured very high proportions of the available business. The most significant single orders placed for production platforms, those for development of the northern sector of the North Sea began and that British industry has won 13 of the 19 orders placed for platform capacity or technology where it is deficient.

The suggested code of practice goes into some detail on tender specifications and conditions, partly in response to what the OSO regards as misbehaviour by certain companies in recent contracts, and also suggests that the OSO be given not less than a week to look at and respond to any award decision by the company before the selected supplier is notified.

What makes the platform equipment business so difficult to break into under normal circumstances is the oil industry's habit of ordering from those suppliers it already knows well.

of conduct for ordering British equipment has undoubtedly caused friction in the past, with companies objecting to the degree of intervention by the OSO in their tender and contracting practices.

The OSO's latest move was to send a letter to the Offshore Operators Association suggesting a "Draft Memorandum of Understanding" and a "Code of Practice" on ordering to be agreed voluntarily with the companies.

The proposed procedures which the companies would agree to follow, both on their own behalf and on behalf of their main sub-contractors, is represented largely as a confirmation of existing practice, restating the idea that the U.K. industry should be given full and fair opportunity to compete and that British industry should be encouraged to create new capacity or technology where it is deficient.

The suggested code of practice goes into some detail on tender specifications and conditions, partly in response to what the OSO regards as misbehaviour by certain companies in recent contracts, and also suggests that the OSO be given not less than a week to look at and respond to any award decision by the company before the selected supplier is notified.

What makes the platform equipment business so difficult to break into under normal circumstances is the oil industry's habit of ordering from those suppliers it already knows well.

This has not so much to do with conservatism as with the need to get the equipment quickly, man in a hurry always finds it easier to go to the people who knows rather than to start a mining up a potential new supplier.

There are three things which a potential supplier to convince the oil companies when trying to break into the market. He must first satisfy customer he has the technical expertise to meet his requirements; he must satisfy customer he can deliver a reasonable price; and he must satisfy him he can deliver time. Every now and again changes but they all are important.

Whatever Government is sure to put on the oil companies still follow these guidelines, and if they are convinced that no UK company can do them all they will buy where.

For those British companies which can deliver the goods there will be hand-picked orders for the next years. The OSO says that 30 platforms will be required in 1980 and that most of them should be built in Britain.

Because of the fragment of the business, many of companies involved—and more than 110 at the last—will not see much of a part on their operations, this extra work. But for a few the rewards will be rich indeed.

Kenneth Goo

## Making the diver's world safer

DIVERS die at the rate of one in 100 in the North Sea, in a profession which has just been calculated to carry a fatality risk 33 times higher than that for coal miners. But events this year will make the offshore depths a much safer place to earn a living. Government action, based substantially on information and advice from the industry itself, will reduce the dangers on two broad fronts.

The first came in with 1975, new statutory diving regulations effective from January 1—the result of years of discussions between Government and industry—and the second was the start last month of operations at the new Underwater Training Centre at Loch Linne, Fort William, run by the Training Services Agency.

Department of Energy officials have cause for considerable satisfaction that Britain's new diving regulations were the first from any country involved in the search for North Sea oil and gas. The Norwegians are now drafting a code of their own and I understand that, if not a carbon copy, it will not be dissimilar. The possibility of an international diving code is now being examined by the European Diving Technology Committee, on which Britain is represented by the D of E's Senior Diving Inspector, Commander Jackie Warner.

### Underwater

If divers are properly trained and operate in a regulated working environment, then clearly the risk of death or injury from technical fault is reduced. But as Commander Warner pointed out at a major diving conference in Brighton earlier this year, it is realistic to expect an increase in purely physical accidents in the North Sea.

"We are now talking about civil engineering work under water and we can expect more accidents of the type you get at civil engineering sites on shore," he told the conference.

Once a man working under pressure or saturation is injured, his recovery and treatment again becomes a technical/medical problem and it is this aspect of North Sea diving which understandably evokes the most emotional arguments within the industry. When new technological barriers are being broken, as they are beneath the North Sea, the problem is to ensure that diving medicine keeps abreast.

In the short term, the Government is establishing a "flying squad" of doctors with basic diving training who can fly out to rigs and operate under pressure. In the longer term a working party will look at methods of bringing men off the rigs into pressurised hospital facilities: the problem here is that diving chamber design is not universal, which causes difficulties in transferring injured divers from one chamber into another for helicopter transport so much to further deep sea to specialised facilities onshore.

The Dundee-based European offshoot of the American Inter-national Underwater Constructors claims to have found the solution to the transfer problem with a two-man rescue chamber that can adapt to any system and wants financial support to develop it. In Brighton, IUC's general manager Mr. Stan Kel-log said that training doctors to go out to the rigs to operate was unrealistic "like doing open-heart surgery in a garage." But many felt that it was the only short term palliative.

The very first medical requirement, of course, is that the divers should be fit and the new regulations which came into force in January make annual examination, and approval by one of the Government's new squad of diving doctors, a statutory requirement. The team of doctors is now up to about 60, with some based abroad for the benefit of foreign nationals coming to work in the U.K. sector of the North Sea.

In a report this month the Scottish Council of the British Medical Association says that divers require an "exceptional degree of specialist support." The report recommends that an Institute of Offshore and Environmental Medicine should be built up rapidly and that health centres should be constructed alongside Aberdeen Royal Infirmary and at Lerwick in the Shetlands.

The very first practical requirement is that the divers should be properly trained. The only 18 months ago, Star took a new Loch Linne facility 52 per cent. share in the Hull started training for basic air diving last month (August) and now awaits delivery of a £900,000 system in the early New Year, which should enable deep diving training to start around February.

The deep diving system is effectively a specialised barge with three deck decompression, one transfer lock and one submersible decompression chamber together with associated life support systems and will have a 675 feet depth capability.

The contract for its supply has gone—not surprisingly since

the new Centre is a joint Government-private enterprise project—to a British company, Seaford Maritime Limited. With a strong policy that pre-dates the current campaign, the order was unlikely to go abroad. But Britain's overall deep sea diving capability, in equipment or contractual terms, is weak and fragmented and there are strong Continental European—mostly French and Italian—as well as American presences in the U.K. sector of the North Sea.

Official British Government policy, therefore, is to engineer new alliances in the diving industry to put more commercial muscle into the home-grown product. Nothing has come so far of a much-discussed possibility of a big new multi-firm link-up but the industry expects an announcement along these lines later this year.

One important get-together earlier this year involved Britain's powerful Constructors Comex SA, a major force in the North Sea, which has done so much to further deep sea diving technology and experience. The Dundee-based European offshoot of the American Inter-national Underwater Constructors claims to have found the solution to the transfer problem with a two-man rescue chamber that can adapt to any system and wants financial support to develop it. In Brighton, IUC's general manager Mr. Stan Kel-log said that training doctors to go out to the rigs to operate was unrealistic "like doing open-heart surgery in a garage." But many felt that it was the only short term palliative.

### Minimise

The new joint venture, called C&J, provides a consultancy, technical and supervisory services in the fields of diving technology, equipment layout and handling systems, manned and unmanned submersible systems, manipulators and robots, special purpose marine equipment, maintenance and inspection techniques, cutting and welding systems and sub-sea control systems. The new company's aim is to be in at the design stage of North Sea projects to minimise costs in inspection and maintenance later.

Comex has a hand, too, in one of the most exciting of the latest underwater systems to be developed. The French worked in co-operation with Kockums, of Malmo, Sweden, to produce a unique, all-weather system which, it is claimed, will triple the on-job time for offshore diving teams in the North Sea.

The system, comprising a 1,600-ton submarine support vessel and a 50-ton submersible which can be launched and recovered in calm depths, works entirely independently of surface conditions.

Back in Britain, the country's biggest diving company, Hull-based Northern Divers Ltd., was taken over earlier this year by Star Offshore Services Ltd., an all-British firm, itself formed only 18 months ago. Star took a 52 per cent. share in the Hull company and will take the rest over the next four years.

Northern Divers Ltd., which employs about 60 divers, has recently taken delivery of equipment which made it one of the only two British companies with a diving capability of over 630 feet. The other is Strongwork International Ltd., based at Caldicot, which this year paid £400,000 for a deepsea diving system said to be capable of supporting saturation diving operations to 1,000 feet.

Roger Tilleray  
Editor, The Oilman

## The all British cable ladder system



First in the field.

**Vantrunk Engineering Limited**

EDINBURGH PLACE, HARLOW, ESSEX CM20 2J  
Tel: 0279 (HARLOW) 24652- AND SOHAM CAMBRIDGESHIRE

## BLANKEVOORT for dredging

P.O. Box 19, BLOEMENDAAL, Netherlands  
Phone: Haarlem (023) 259131 Telex: 41276 blavo nl

## Anti-corrosion specialists for pipe protection

Application of coat and wrap & internal linings to all diameter pipes. All specifications as required for the gas, oil, water and chemical industries.

Modern Metal Treatment (Bristol) Limited

Dixon Road, Brington, Bristol BS4 5QW  
Tel: 0272 770441 Telex: 44848  
Treatment Plant at Bristol and Scott Regional Unit at Ardne Point.

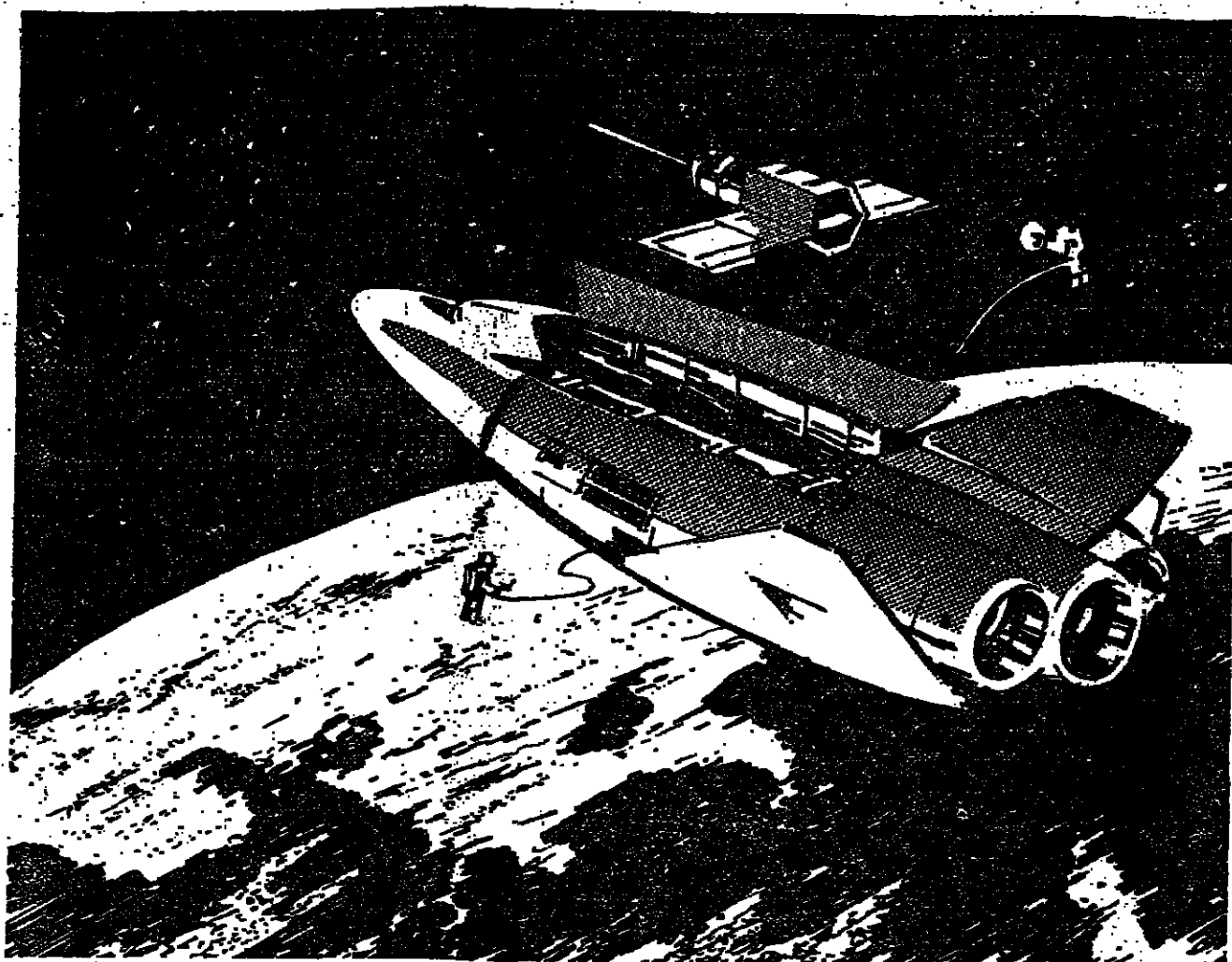
a member of the Modern Engineering Group

هكذا من الأصل









## Take the long view

There are two ways to buy reinforcing bars. You can chop and change...moving from one supplier to the next to get what you think is the best deal at any given time. Or you can build up a steady working relationship with a supplier.

At GKN (South Wales) we go along with the second method. If a customer sticks with us (and most of ours do) then we stick with him. We make sure he gets a fair deal on our GK TorBar reinforcing bars—through good times and bad, through steel glut and steel famine.

It's a policy that pays off in the long run for both supplier and buyer. If the GKN way is the way you like to do business, get in touch with us now.

GK TorBar... ■ Readily weldable  
■ High yield  
■ High bond

... cold worked reinforcing bar.



**GKN (South Wales) Ltd**  
Castle Works, Cardiff CF1 1TQ.  
Tel: 0222-33033. Telex: 49316.

A member of GKN Rolled & Bright Steel Ltd.

## We can help you get your sea legs!

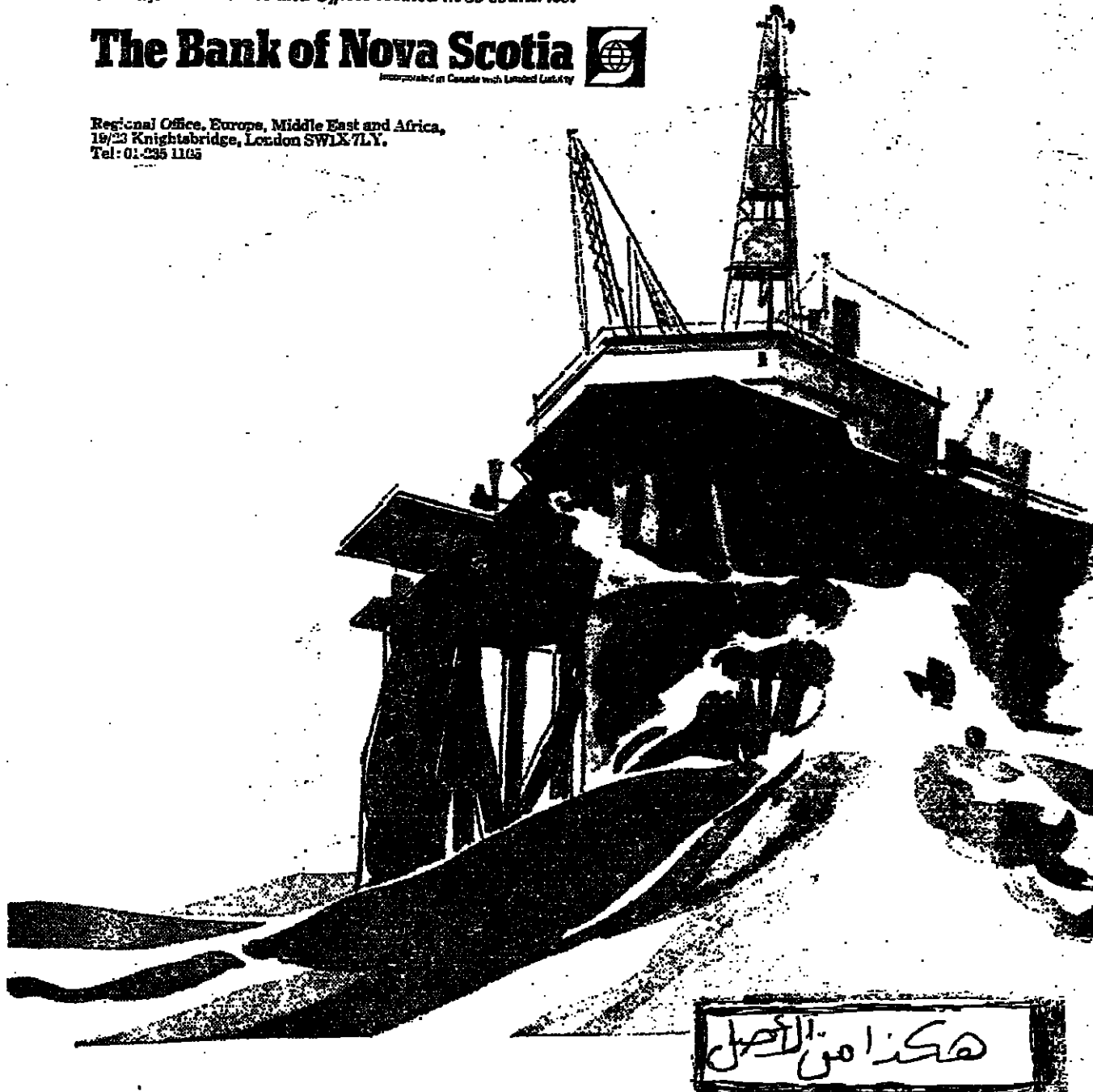
The Bank of Nova Scotia has had a foot in the oil industry since the early days in Canada and the U.S. We have learned a thing or two in that time and built up a team of specialists, second to none in this field. Their experience and our resources can be utilised to the maximum advantage for almost any financial requirement of North Sea Oil production or servicing operation.

Our local, national and international facilities are at your disposal—take your first step and make contact with the specialists.

Assets exceed Can. \$15,000,000,000.  
Over 1,000 Branches and Offices located in 39 countries.

**The Bank of Nova Scotia**

Regional Office, Europe, Middle East and Africa,  
19/21 Knightsbridge, London SW1X 7LY.  
Tel: 01-235 1105



هكذا من الأصل

## EUROPEAN OFFSHORE TECHNOLOGY VIII

Offshore oil operations have led to a boom in the North East region of Scotland, particularly in the service sector, and to considerable back-up developments in the older West Central industrial region. There is also the direct element of platform production.

## Scotland's stake

DURING the last four years an icon partnership (Highland Fabricators, in which Wimpey industrial expertise associated has recently increased its stake with offshore oil and gas de- from 33 to 50 per cent. with development has become concen- Brown and Root); one British- trated in Scotland. With some Italian group (Redpath-Dorman 27,000 employees now estimated Long, North Sea), two Anglo- to be directly engaged in work French enterprises (McAlpine for the North Sea and other off- Sea Tank and Howard-Doris) shore locations, and between and two Anglo-Dutch projects 35,000-40,000 calculated overall (ANDOC and Sea Platform Con- structors).

Associated with the platform- makers is a significant contin- gent of companies manufactur- ing deck modules and other items of equipment and super- structure for installation on the platforms. On the Forth estuary, Motherwell Bridge at Leith and Burntisland Fabrica- tors in Fife (a subsidiary of Robt Caledon) are working in this field, while on the Clyde similar markets have been de- veloped by Foster Wheeler-John Brown and JBE Offshore, an offshoot of John Brown Engi- neering.

This field is liable to become intensely competitive. Until recently the major east coast steel platform fabricators have largely refrained from under- taking this ancillary work. How- ever, they are all undoubtedly geared to enter the field and, in the case of two of them, McDermott's and BDL, have just begun doing so by taking orders for deck modules. It is expected in some quarters that to ensure continuity of work against lower-than-predicted orders for basic platform jackets, the big steel fabricators will from now on be under some pressure to limit the volume of steelwork they put out to sub-contract.

### Switching

As things have turned out, the West Central region of Scotland has surprised itself with the depth of its participa- tion in oil-related manufactur- ing. It seems clear from Gov- ernment surveys that most back- up manufacturing is now being conducted in this region and, perhaps significantly in view of their dwindling traditional mar- kets, that this has involved the greatest number of established enterprises, which have suc- ceeded in switching their pro- duction to new offshore lines.

Conversely, the North-East region, around Aberdeen, has experienced the largest genuine growth with far less emphasis on the redeployment of person- nel to the new markets, but with far greater stress on ser- vice rather than manufacturing projects. While one Depart- ment of Industry survey indi- cated, for instance, that only half a dozen of the 160 West Central region oil-related enter- prises had been set up specifically to serve the offshore industry, in the North-east fully 120 of the 177 enterprises were estimated to have been estab- lished wholly for the offshore market.

The predominant element in the Scottish offshore industry is its capability in constructing production platforms. Seven of the eight yards which are now either operational or being pre- pared for work are north of the Border: three for producing steel jackets and four for con- structing concrete gravity structures.

This sector of the industry (whose prospects are discussed in a separate article) comprises one wholly American company and one wholly American company and Breder Price (Leith); and (McDermott), one Anglo-Amer- ican oilfield engineers

Halliburton Manufacturing Isles, much large-scale de- ments are in progress. O Orkney Isle of Flotta, a storage and transhipment on Aberdeen and the North- minal is being construct- handle oil piped from Oc- tal's Piper field. On Shet- talium Voe, an even project is under way for preparation of an oil in- or more of their business to North Sea, accounting for an estimated 8,500 employees. The from Shell-Esso's Brent growth of the industry has and BP's Ninian field, and moderated slightly (some 28 rigs are now operating offshore, compared with the 35-40 opti- mistically forecast for the British sector about a year ago).

This comparative lull, however, has helped ease last year's intolerable pressure on local resources and has given a com- parative breathing space for consolidation. Some 20 oil companies are now operating from Aberdeen, and half a dozen—Shell, BP, Total, Amoco, Occidental and Burmah-Signal have located operational headquarters there. Within the city's harbour (now converted to tidal operation) integrated supply bases are being run by Shell, Amoco, Total and Texaco on their own account, and freelance by Sea- forth Maritime and the John Wood group. Hand in hand with exploration work and the unfolding development phases there has been a dramatic increase in the number of diving companies located in the area—in the past year the number has almost doubled to 22.

North of the self-styled "Houston of Europe," a further two supply bases have been built at Peterhead, by the British Oxygen Company and by the Government with a sub- sequent lease to the Aberdeen Service Company, a subsidiary of Sidlaw Industries. Further port development may become necessary there if proposals for processing natural gas to be landed in the neighbourhood from the Frigg and Brent fields materialise—one such proposal for ammonia production has been submitted by a Scan- dinavian group, Scanitree, and is now being considered by the Government.

Oilfield suppliers have also gathered at Montrose, where P & O recently opened a supply base, in Dundee out of which BP and Conoco operate supply fleets, and Leith where Santa Fe and Continental Shelf Supply are based. In all 17 service ports have been established in Scotland, including one at Lyness in Orkney, four in Lerwick and one at Sandwick (both in Shetland). Between them they provide more than 65 berths for rig work-boats. However, in the Northern

Oilfield suppliers have also gathered at Montrose, where P & O recently opened a supply base, in Dundee out of which BP and Conoco operate supply fleets, and Leith where Santa Fe and Continental Shelf Supply are based. In all 17 service ports have been established in Scotland, including one at Lyness in Orkney, four in Lerwick and one at Sandwick (both in Shetland). Between them they provide more than 65 berths for rig work-boats. However, in the Northern

Oilfield suppliers have also gathered at Montrose, where P & O recently opened a supply base, in Dundee out of which BP and Conoco operate supply fleets, and Leith where Santa Fe and Continental Shelf Supply are based. In all 17 service ports have been established in Scotland, including one at Lyness in Orkney, four in Lerwick and one at Sandwick (both in Shetland). Between them they provide more than 65 berths for rig work-boats. However, in the Northern

Oilfield suppliers have also gathered at Montrose, where P & O recently opened a supply base, in Dundee out of which BP and Conoco operate supply fleets, and Leith where Santa Fe and Continental Shelf Supply are based. In all 17 service ports have been established in Scotland, including one at Lyness in Orkney, four in Lerwick and one at Sandwick (both in Shetland). Between them they provide more than 65 berths for rig work-boats. However, in the Northern

Oilfield suppliers have also gathered at Montrose, where P & O recently opened a supply base, in Dundee out of which BP and Conoco operate supply fleets, and Leith where Santa Fe and Continental Shelf Supply are based. In all 17 service ports have been established in Scotland, including one at Lyness in Orkney, four in Lerwick and one at Sandwick (both in Shetland). Between them they provide more than 65 berths for rig work-boats. However, in the Northern

## Platform

CONTINUED FROM PREVIOUS PAGE

According to BP engineers, the first two Forties platforms to be drilled from a fourth platform and two more platform jackets are in position. A seventh steel platform for crew accommoda- tion may be needed, but was known. The second two platform jackets each weigh considerably less, because the design of the upper part of the jackets has been optimised with respect to deck loadings. The general problem of over- or under-design, however, revolves mainly around the questions of wave heights, metal fatigue, corrosion, crack- ing and hydrogen embrittle- ment. The recent survey of fixed steel platforms in the southern North Sea gas fields is not particularly encouraging in this respect. Neither is the recent upwards revision of the Fifty Year Wave in the northern waters to over 115 feet.

The problems of waves and weather also affect the offshore storage and loading of oil and gas. Production from Phillips' Ekofisk field started two years ago with a combination of four sea-bed wells, single point mooring buoys for tankers, and the well known giant concrete caisson with its storm-proof honey-combed protective wall. This 210,000 ton caisson has a storage capacity of 1m. barrels and was installed to allow continuous production during the first phase of the Ekofisk opera- tion—offshore loading by two tankers at two SBM mooring buoys. In the meantime a 220- mile pipeline has been laid from the field to the Tecsida (SALM) unit. In most of this first generation of buoys, the oil delivery hoses are floated from the buoy to the tanker, and are thus vulnerable to dam- age by collision or certain sea conditions. The later genera- tion of buoys avoids this by allowing the hose to be run direct from the buoy to the tanker via a supporting boom. Two of the largest offshore platforms handle oil from 30 loading units yet designed will wells. More wells are being operate in Shell/Esso's Ank

and Brent fields: the ELSEB the Brent field is ev- and the Spar, respectively. The than the ELSEB and moored in about twice depth, at 460 feet (140 Single Buoy Mooring) weighs This buoy provides buoyancy compartments extend- ing into the water like a fisher- man's float. It is linked to a permanent crew who nearby production platform by oil repairs and main- tains temporary crew accommo- dation and a helipad. As an ex- ample, the current pri- cables and a 10-inch delivery ELSEB is about 55m, nose are coiled below the heli- pad, and the unit can accept a tanker up to 50,000 dwt.

The Spar buoy, developed for

John

**WORLD LEADER**  
SPECIAL WELDING ALLOYS

**Eutectic**  
Castolin

FOR REPAIR AND MAINTENANCE

IN RESEARCH AND SERVICE

WORLD LEADER IN  
WEAR PREVENTIVE  
WELD COATINGS AGAINST  
ABRASION, CORROSION, FRICTION  
AND IMPACT

EUTECTIC CO. LTD.  
FELTHAM, MIDDLEX.  
Tel: 01-890 3680

42 WORKS - SERVICE IN 157 COUNTRIES



# Development in Scotland slows

THE LAST year has been a reflection of some doubts about the availability of spare capacity in the U.K. industry. The fact is that three of the five operational U.K. yards which have delivered platform jackets in 1976 have secured new orders which will maintain their workforces until 1977.

As things now stand, only two existing yards would in practice be capable of handling fresh orders without embarking on a massive expansion of their construction and assembly facilities. These are: Redpath Dorman Long (North Sea), in Fife, which is due to deliver a steel jacket for Shell-Exco's Brent field shortly; and McAlpine-Sea Tank in Argyll, the smallest of whose three concrete structures building basins has just become vacant.

To these can be added the newcomer to the market, Sea Platform Constructors which, with £12m. worth of Government finance, is now completing its concrete platform construction site at Portavadie, Argyll. Although sites have also been found for a further three "approved" platform designs—Condeep at Campbeltown, Argyll; ANDOC at Hunterston, Ayrshire; and Taywood Seltrust at Achness, Easter Ross—competition has been effectively restricted to those with mobilised sites.

There have been a number of reasons for this. Rapidly rising inflation has prompted serious re-examination of investment programmes and has encouraged more extensive appraisal of wells already discovered. A good deal of uncertainty is also repeatedly said to have been caused by Government plans, first for its new Petroleum Revenue Tax which altered cash flow calculations, and second for majority state participation through the proposed British National Oil Corporation, the effects of which oilfield financing are far in clear.

In addition, development has been affected by the cumulation of greater technical knowledge about the geology of individual fields. This has meant that while there has been no alteration in official estimates of recoverable oil, it serves from known finds, all times last year. By the same token, it is now felt that the last year's lull has enabled the industry to prepare for more production wells (in some cases a level which should make it as much as 30 per cent more) on fewer fixed platforms. Finally, the lull in platform

ordering may also have been a reflection of some doubts about the availability of spare capacity in the U.K. industry. The fact is that three of the five operational U.K. yards which have delivered platform jackets in 1976 have secured new orders which will maintain their workforces until 1977.

As things now stand, only two existing yards would in practice be capable of handling fresh orders without embarking on a massive expansion of their construction and assembly facilities. These are: Redpath Dorman Long (North Sea), in Fife, which is due to deliver a steel jacket for Shell-Exco's Brent field shortly; and McAlpine-Sea Tank in Argyll, the smallest of whose three concrete structures building basins has just become vacant.

To these can be added the newcomer to the market, Sea Platform Constructors which, with £12m. worth of Government finance, is now completing its concrete platform construction site at Portavadie, Argyll. Although sites have also been found for a further three "approved" platform designs—Condeep at Campbeltown, Argyll; ANDOC at Hunterston, Ayrshire; and Taywood Seltrust at Achness, Easter Ross—competition has been effectively restricted to those with mobilised sites.

There have been a number of reasons for this. Rapidly rising inflation has prompted serious re-examination of investment programmes and has encouraged more extensive appraisal of wells already discovered. A good deal of uncertainty is also repeatedly said to have been caused by Government plans, first for its new Petroleum Revenue Tax which altered cash flow calculations, and second for majority state participation through the proposed British National Oil Corporation, the effects of which oilfield financing are far in clear.

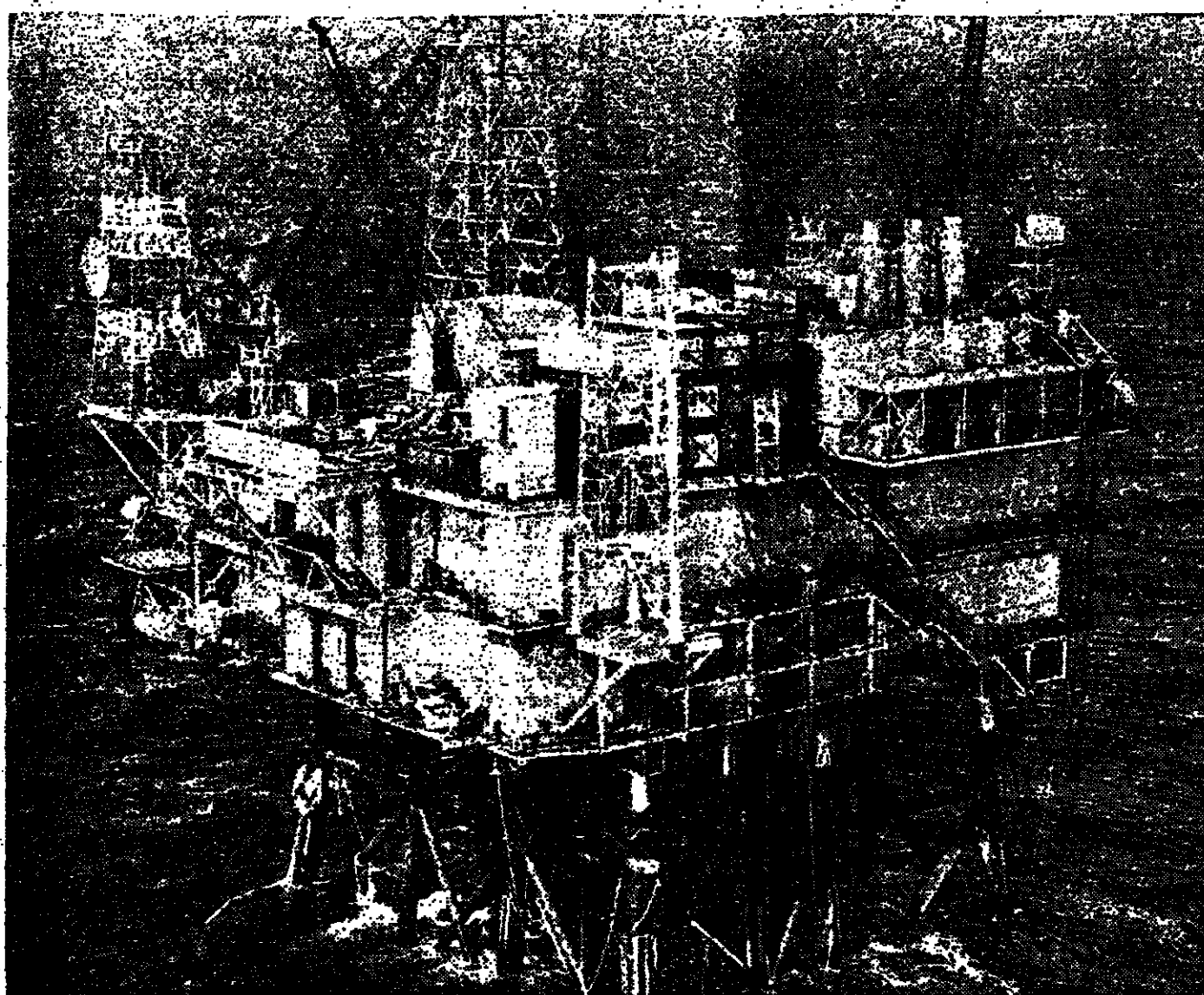
In addition, development has been affected by the cumulation of greater technical knowledge about the geology of individual fields. This has meant that while there has been no alteration in official estimates of recoverable oil, it serves from known finds, all times last year. By the same token, it is now felt that the last year's lull has enabled the industry to prepare for more production wells (in some cases a level which should make it as much as 30 per cent more) on fewer fixed platforms. Finally, the lull in platform

ordering may also have been a reflection of some doubts about the availability of spare capacity in the U.K. industry. The fact is that three of the five operational U.K. yards which have delivered platform jackets in 1976 have secured new orders which will maintain their workforces until 1977.

## Imposed

The group operates a yard in Rotterdam, and it has been told by the British Government that its underwriting of the Hunterston development (which is only now under way) will lapse if it receives an order which it first allocates to the Dutch yard. This condition has been imposed partly in response to trade union anxiety about the stability of employment in yards which currently account for some 7,000 jobs.

This anxiety has been fed by the past experience both of the number of U.K. sector orders which have been placed abroad, and of the wildly fluctuating peaks and troughs of employment produced in yards which have secured U.K. sector work. These fears have been authenticated, too, by at least one assessment of the platform situation, done by Aberdeen University, which suggests that if an over-capacity construction and fabrication industry has not already been created, then one will be developed quite soon. The



Production platform Graythorpe 1 in BP's Forties field, which began production drilling in June.

University expects substantial excess capacity particularly for steel structures once the peak building years of 1977 and 1978 are past and it expects some yards to encounter increasing difficulties in securing enough work to remain in uninterrupted operation.

Several of the existing yards have recognised the implications of greater competition for fewer orders in the industry. The three Scottish steel-jackets yards are all attempting to diversify their production. McDermott's at Ardersier, which from the outset has geared itself for general offshore fabrication work has a particularly flexible yard. It is currently undertaking the first "package deal" with an oilfield developer in providing not only the basic platform jacket for Union Oil's Heather field but also the decks, modules and

Similarly, Highland Fabricators at Nigg, as well as building the jacket section for one of the Ninian field platforms, is devoting some 60 per cent of the capacity of its steel rolling mill to subcontracted pipework for such customers as Occidental, Total Marine and Elf Norge. It, too, is capable of building platform deck modules but has not undertaken this work yet. With an eye on possible future market developments, it has designed a new "hybrid" steel-and-concrete platform structure which would be capable of operating at greater sea water depths than hitherto, but which would require the creation of a second, larger, dry dock to construct.

At Methil, in Fife, the Redpath Dorman Long (North Sea) company, in which the British Steel Corporation is in partnership with Italian specialists, has

also designed a concrete-based hybrid structure as a hedge against the increasing popularity of all-concrete platform designs. While it awaits an order for another major platform, to replace the Brent oilfield structure it is due to deliver this autumn, the company is building two smaller gasfield jackets for Amoco, and deck modules for Phillips' Norwegian, Edda field, and Occidental's Claymore field.

One other concrete-structures yard, that of the Anglo-French Howard Doris partnership, has since been brought into operation at Loch Kishorn, in the West Highlands. It is building the largest concrete platform yet ordered for use in the North Sea, a 400,000-tonne structure for the Ninian field. The group also operates sites in Norway and Sweden.

Chris Baur

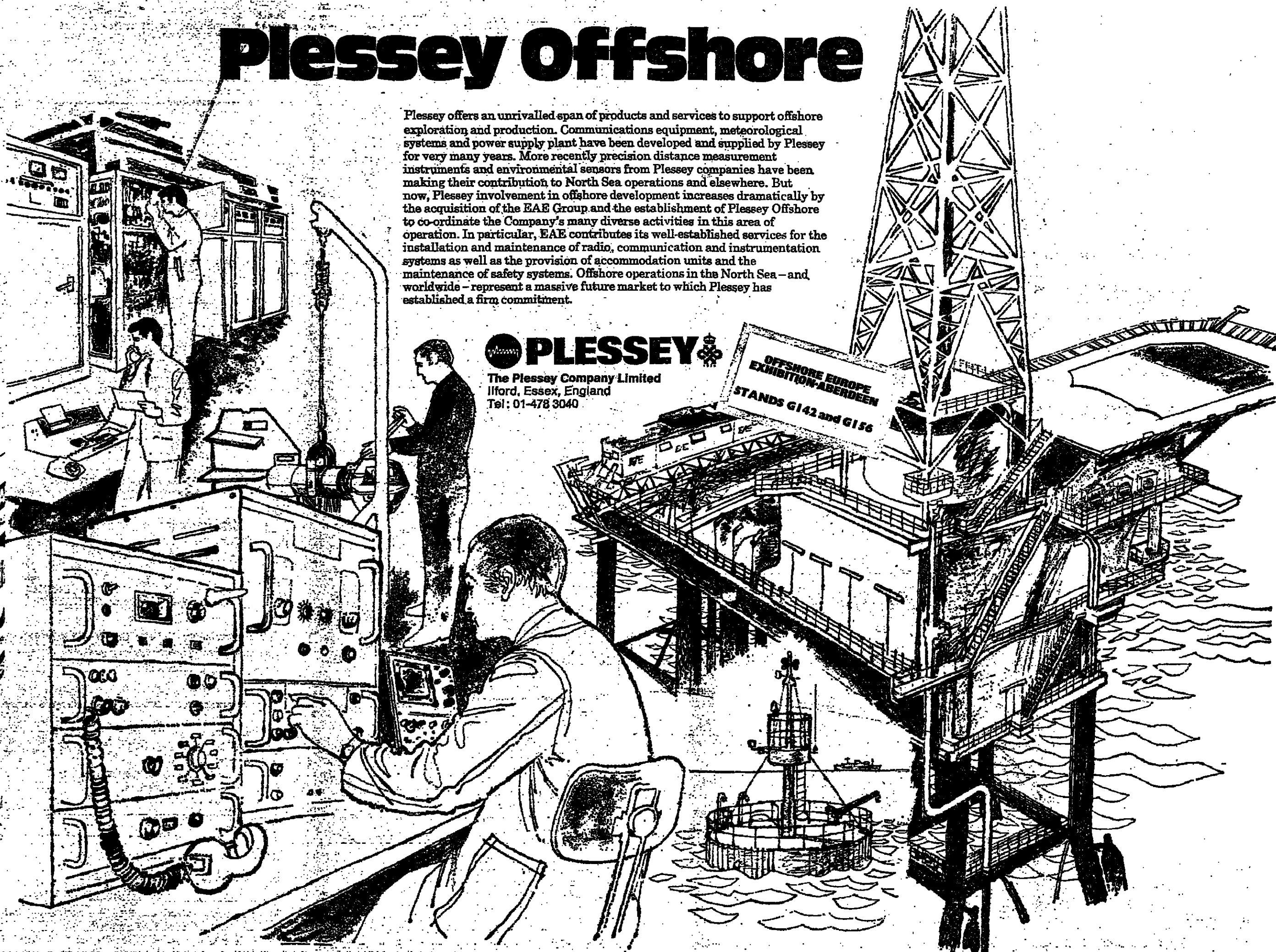
# Plessey Offshore

Plessey offers an unrivalled span of products and services to support offshore exploration and production. Communications equipment, meteorological systems and power supply plant have been developed and supplied by Plessey for very many years. More recently precision distance measurement instruments and environmental sensors from Plessey companies have been making their contribution to North Sea operations and elsewhere. But now, Plessey involvement in offshore development increases dramatically by the acquisition of the EAE Group and the establishment of Plessey Offshore to co-ordinate the Company's many diverse activities in this area of operation. In particular, EAE contributes its well-established services for the installation and maintenance of radio, communication and instrumentation systems as well as the provision of accommodation units and the maintenance of safety systems. Offshore operations in the North Sea—and worldwide—represent a massive future market to which Plessey has established a firm commitment.

**PLESSEY**

The Plessey Company Limited  
Ilford, Essex, England  
Tel: 01-478 3040

OFFSHORE EUROPE  
EXHIBITION-ABERDEEN  
STANDS G142 and G156





## HEATON

### CAST STEEL VALVES

#### THE GREAT FLOW CONTROLLERS OF THE INDUSTRY

STAND  
H190



'Heaton' Cast Steel Wedge Gate Valves  
BS 1414 and API

'Heaton' Cast Steel Swing Check Valves  
BS 1868

To Classes 150, 300, 600, 900 and 1500.

Hattersley Newman Hender Limited,

HN

Ormskirk, Lancashire L39 2XG England.

Telephone: Ormskirk 74281 Telex: 627571

☐ A Member of the Pegler Hattersley Group

## CHANNEL ISLANDS

METAL FABRICATING  
COMPANY

Ideally located for exports

Willing to consider association with U.K.  
manufacturer or exporter to exploit its  
large modern premises and tax shelter

Write Box A 5219, Financial Times, 10 Cannon  
Street, EC4P 4BY

## EUROPEAN OFFSHORE TECHNOLOGY X

Among the more complicated aspects of North Sea  
operations is the question of seabed exploitation.  
This involves to a critical degree the direction of research  
and development.

# Subsea development

THE TECHNOLOGY for producing and processing oil on the seabed—at least in the initial phases of handling—is no longer a pipedream, a question for the research and development rather than the marketing side of the oil business. In the North Sea it is here and now. The equipment is available and priced for completing single or cluster wells in deep water, with maintenance being carried out either through manned access or replacement of parts from a surface vessel. Lockheed and SEAL have both developed manifold centres, using manned access for maintenance. The designs are there for floating production platforms anchored to the seabed and having virtually no limitation on water depth. And, most important of all, the oil companies are beginning to use the systems.

At the Beryl Field in the U.K. sector of the North Sea, the Mobil group has this summer installed a SEAL-designed subsea well completion partly for experimental purposes and partly to produce fuel for use on the platform itself. At the Thistle Field, the Barmah group has ordered a Lockheed system for pipeline riser connectors. British Petroleum, in conjunction with CJB, is now well advanced with plans to produce an entire field using subsea systems and floating platforms, possibly for first use on its Magnus Field north-east of the Shetlands. And both in the North Sea and in the U.S., companies like Chevron, Exxon, Shell, Mobil and others are now

quite confidently preparing for the day when they will use subsea systems for water depths of well over 1,000 feet. The take-off of subsea technology from the development to the commercial stage is partly the result of the push by the oil industry into deeper and more difficult waters where the conventional systems of fixed platforms piled or settled on the seabed are being strained and where the cost of constructing platforms for 1,000 feet water depths becomes prohibitive. Already the search for oil and gas at the northern limits of licensed U.K. and Norwegian North Sea acreage close to the 62nd Parallel have produced finds such as Magnus in 700 foot water depths where this line between current and subsea technology is being approached and quite probably crossed. Within the next two years drilling is due to start north of the 62nd Parallel, west of Greenland, and possibly on recent acreage taken out in the Porcupine Bank area west of Ireland and in some of the deeper-water blocks west of the Shetlands. The areas prove highly prospective, particularly on the Norwegian Shelf north of 62, and the prospects of making finds there must impel companies to plan as soon as possible how they might produce the reserves.

### Dominated

Equally important in propelling a move towards subsea equipment has been the almost incredible rise in costs for conventional systems within the last year or so. With platforms now costing as much as £100m. or more for northern waters, the economics of offshore production in Europe have become increasingly dominated by the need to find the reserves to justify such a cost.

In the process, not only has the minimum reserve requirement for commercial exploitation risen sharply to several 100m. barrels of recoverable reserves in the northern North Sea, for example, but companies have had to think hard about the economics of producing the reserves at the edges of the field not drained by the main platforms and even harder

about the costs of the lead time between discovery and start-up. In this context, subsea systems can be seen as a way of tying in production from the extreme margins of fields and as a means of ensuring earlier production than would be possible with a fixed platform.

The question now is no longer when and whether subsea systems will be introduced offshore Europe but one of how far they will develop as a complement and possibly a substitution for conventional systems in water depths of up to 600-700 feet depths, how far they can curtail the current geometric increase in costs which accompanies rises in water depths and how far they will solve the problems of really deep water within the economics of the current world price for oil.

None of these questions is easy to answer at the moment, and much must depend not only on parameters such as water depths but also on the particular nature of the reservoir concerned, the depth of the oil zones, the well spacing, the fluids required and other questions.

But as a generalisation, it looks as if the subsea equipment now being produced and the surface structures which may go with it will be cheaper than the conventional technology for fixed platforms in deep water. Against that, the costs of maintenance and installation, and the costs of drilling the individual wells is much higher than through a conventional system. On the technical side, the equipment for single or multiple well head completions is now largely well developed. The real problems still lie with the installation of flow lines and flow-line connections on the seabed and the development of secure risers transferring the oil and gas from the seafloor to the surface platforms, tankers or storage units.

Despite the push towards deep-water exploration in several thousand feet, the industry is still a long way off being able to carry out separation work and to contain the essential power generation, communications, and manned access facilities on the seabed itself. For some time to come, it is likely that above water structures, whether tension legged floating structures or the articulated structures being developed by Exxon, Shell (with its Beryl spar buoy system), Elf and others, will be needed, most probably directly above the subsea cluster-well and manifold facilities. Added to these problems, there is still debate as to whether the subsea systems are better developed with the use of replaceable parts or with manned access into atmospheric chambers—the "wet" and "dry" alternatives—and whether the several designs for buoyant platforms anchored to the seabed now being produced in the U.K., U.S. and Europe are ready for practical application.

### Overcome

A considerable effort is being launched to solve all these questions both here and in the U.S. and there are signs that many of the problems, particularly on flow-line installations and risers, should be overcome within the next few years.

The application of subsea systems in the North Sea as also elsewhere is thus likely to be a gradual as well as varied one. For major fields with thick and deep oil zones, the conventional technology of fixed platforms may well be extended a good deal further before the industry is forced on to the seabed. The weather conditions in the North Sea, with the resulting difficulties of access to subsea wells, coupled with the high cost of drilling may still restrain the use of subsea completions to produce from the peripheries of fields. But the attractions of using such systems both to produce additional reserves and to speed up first production have become a great deal more powerful over the past year. As with so many other areas of technological development, the new is likely to develop side by side with the old over the next few years, moving in some cases from shallow water to deep-water as experience is gained and, in other cases, moving from deeper water, where necessity forces its use, back to shallower water as the economics determine.

Adrian Hamilton

## Bigger and better research needed

IF ANYTHING were needed to underscore the need for a bigger research and development effort in support of North Sea and other offshore activities in Europe, the report of the Scottish Council of the British Medical Association earlier this month surely provided it. This report, on the medical implications of oil-related industry, demonstrated just how hazardous a place to work the North Sea is—ten times as dangerous as U.K. coal mines for those on the rigs, and 33 times as dangerous for the hapless divers. The Scottish doctors urged a swift end to the parsimony and bickering that have delayed plans for an Institute of Environmental and Offshore medicine at Aberdeen, to be funded jointly by the Government and the principal oil companies. There is no doubt that the inhospitable environment of the North Sea added a new

dimension to the problems of health and safety at work, and to the treatment of those who may be injured, that cries out for systematic investigation.

Britain has been slow to transfer research and development resources to the offshore sector, tending to rely on the more research-conscious international oil companies to provide this support. In contrast, France and West Germany, with no known offshore resources to match the North Sea discoveries, have been funding offshore R and D was transferred to the energy department. Its research, through the involvement of European companies in year—are scarcely commensurate with the scale of the operation. Unfortunately, at the North Sea, the magnitude of its problems, but they provide the Energy environment towards men and machines coincided with a freedom in

CONTINUED ON NEXT PAGE

## ETPM

offshore  
construction  
engineering

HEAD OFFICE: 102, rue des Poissonniers,  
75018 PARIS, France - Phone: 076.09.68 -  
Telex: ETPM 88212 - Cable: Entrapema Paris.  
UNITED KINGDOM OFFICE: ETPM SERVICES  
Ltd., 11th Floor, Portland House, Stag Place,  
London, SW. 1 - Phone: 828.41.03 -  
Telex: 917.914.



### MAIN DATA

Dimension: 428' x 100' x 29'-6"  
Draft in transit: 15' (at work 20')  
Total Power installed: 10,000 HP  
Propulsion: Two variable pitch propellers with  
orientable KORT nozzles.  
Maximum power 5,000 HP  
Bow thruster w/variable pitch propeller - 800  
8 mooring winches - 4,300' of 1" - 7/8" line.  
Air conditioned quarters for 180 men.

### EQUIPMENT FOR DERRICK WORK

- CLYDE Model S 52 E electrically driven fully  
revolving crane, 650 T at 80' radius.  
- Pile driving equipment as required and two  
boilers with capacity of 5 T/hour each.  
- 8 auxiliary deck cranes located fore and aft  
various pipe handling and miscellaneous lifting  
operations (capacity 16 T and 35 T).  
- Drilling equipment: Capacity 26" to 80" with  
available torque of 60,000 ft/lbs.

### PIPE LAYING EQUIPMENT

- Central ramp designed for coated pipes up  
72" O.D.  
- Tensioning equipment - WESTERN GEAR  
Model LPT 80 - 80,000 lbs tension.

### NAVIGATION EQUIPMENT

- Radar, radio, telex  
- Automatic recording of weather bulletins as  
meteorological data  
- Automatic piloting w/remote control panel  
- Automatic guidance system for helicopters

The offshore oil and gas  
market is worth over  
£1,000 million a year...

...what's it worth to you?

Offshore oil and gas is big business and it's  
world-wide.

It means jobs and new technological  
opportunities for Britain.

The Offshore Supplies Office aims to help  
boost business for Britain in this valuable and  
growing market and ensure that:

- ☐ British industry and commerce knows what offshore operators want.
- ☐ Offshore operators know what British industry and commerce can supply.
- ☐ British industry and commerce gets a full and fair opportunity to supply the operators.
- ☐ Gaps in the capability of British industry are identified and filled.

Why not come and talk with us on Stand E26  
at the Offshore Europe Exhibition, Aberdeen,  
or post the coupon below.

John Anderson, Offshore Supplies Office,  
249-261 West George Street,  
Glasgow G2 4TL.  
Please send me further information  
about OSO and its services.

Name

Position

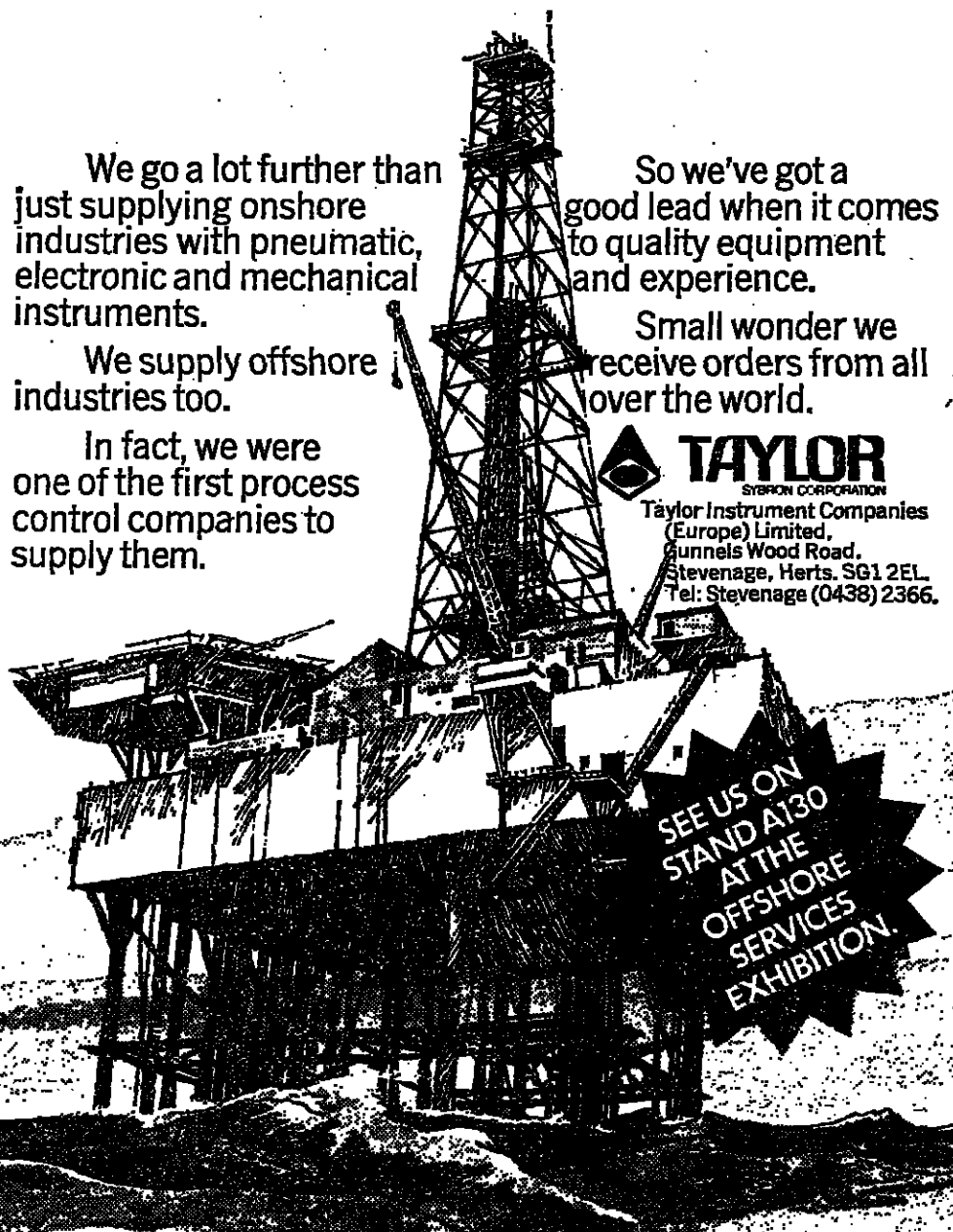
Company

Address

Tel

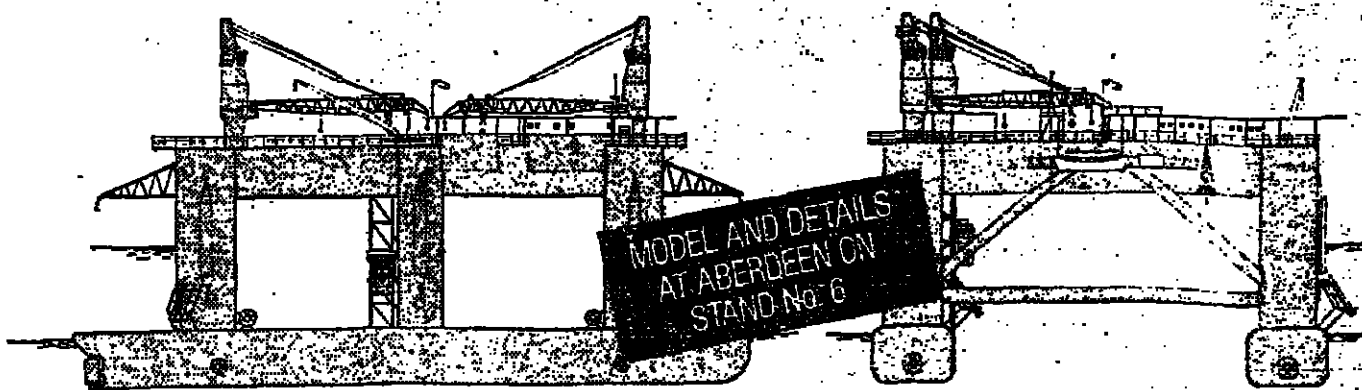
**OSO**  
Offshore Supplies Office

Department of Energy



This is where process control  
companies sink or swim

## A MULTIPURPOSE SEMISUBMERSIBLE SUPPORT VESSEL



MODEL AND DETAILS  
AT ABERDEEN ON  
STAND No. 6

For further information, contact SRS

**SRS**

SHIPPING RESEARCH SERVICES A/S

Hjalmar Brantings vei 8, Oslo 5, Norway - Tel. 15 24 12 Telex 18448

SRS has applied its extensive experience in offshore  
technology and marine engineering to the develop-  
ment of this new multipurpose vessel.

The vessel exhibits motion behaviour equivalent to  
much larger semisubmersibles, and far superior to  
existing mono-hull and catamaran solutions.

The basic vessel can be adapted to a number of off-  
shore roles:  
DIVING OPERATIONS PLATFORM MAINTENANCE  
SUBSEA COMPLETION CORE DRILLING  
SUBSEA PIPE WORK FIRE CONTROL AND RESCUE  
POLLUTION CONTROL

You can view a model of this vessel and discuss it in  
detail on the Aker stand (No. 6) at the Offshore Europe  
Exhibition at Aberdeen, 16-19 September.

مکان العمل



## EUROPEAN OFFSHORE TECHNOLOGY XI

Exploration and development of the North Sea has presented enormous headaches for the financiers. The final three articles of the survey deal with the role of the banks and Government participation, insurance and the work of the classification societies.

## Finance

THE EXPLORATION and development of North Sea oil and gas reserves has proved more hazardous, expensive and generally more troublesome than anyone could have foreseen at the outset. The physical problems have been quite without precedent, even for the major international oil companies, and coupled with the political risks that have since emerged, the whole exercise has, for some, turned sour.

Towards the close of last year and the beginning of 1975 there was a distinct lack of activity in the North Sea exploration and development. At that time, no one knew the impact that a new tax on offshore oil production would have on the industry. The tax was introduced in the Finance Bill of 1975, and it has since been a major headache for the industry. The tax is a 50 per cent charge on the value of the oil produced, and it has led to a sharp decline in the number of exploration and development projects being undertaken.

Even the American banks, which have all the experience—some have had oil departments for over 30 years—and access to larger slabs of cash than their U.K. counterparts are said to be more cautious. It is one thing financing oil exploration and development on dry land, where it is possible even an extension of an existing field, and it is quite another putting up cash for the North Sea where the risks are very high indeed.

In fact, the American banks have not had it all their own way in North Sea finance, even though they have had the expertise on their side. Considering that U.K. banks have had to start from scratch, the progress made, particularly by National Westminster and Barclays, has been admirable. As one spokesman said: "How could we call ourselves a major British bank if we are not involved in the biggest thing around?" In any

event, the clearing banks and merchant banks have participated fully in most of the major consortia.

Without the financial backing of the majors the banks clearly viewed Tricentral as a high risk proposition. In the event, the Government stepped in and provided guarantees on loans up to £350m. so that development of the group's 8.4 per cent stake in Thistle could continue. The price Tricentral has had to pay to the Government is 5 per cent of the royalties over the life of the field.

Government participation moves, apart from Tricentral, have not really got under way in earnest. And this is why most companies are shying away from taking on any new commitments at present. A company is hardly likely to raise £10m. now if, in due course, it is going to give up 50 per cent, or so of the operation. The feeling is that it may as well wait and raise only £500m.

The actual level of exploration has remained low, too, because companies are taking the view that they have quite enough on their hands developing what they already have. The other argument is that with so much oil washing around the world markets at the moment there is little value in creating an even worse over-supply situation.

Thus, the attitude on the part of both financiers and oil companies is more cautious at the moment and the innovations in financing that everyone expected would result from the North Sea, particularly in the area of "off-balance sheet finance," have not surfaced. The pressure on everyone involved to operate and actually get the oil ashore is not matched by a willingness to lift the uncertainty surrounding Government participation.

## Divisions

For most oil companies, costs fall naturally into two main divisions—exploration and development. Part and parcel of the business is to finance the exploration side internally, either by resort to cash flow or "on balance sheet" (corporate) financing where the equity holders are at risk. For the majors the amounts spent each year are vast. Shell, for example, has a capital expenditure budget of between £1bn. and £1.2bn. per annum, out of which the North Sea represents only £170m.—in other words a significant but not dominant part. Even after the tremendous increases in costs the balance sheets of the likes of Shell and B.P. can stand the strain of any extra gearing.

The banks, in fact, usually enter into the picture at the development finance stage, when all the risks of exploration finance are passed. For a banker, the financing of the right sort of oil company in the right situation is clearly an excellent proposition—no risk, and the probability of rapid repayment, possibly in 5-7 years.

However, the smaller oil company has problems. Costs have reared up by so much that it is unlikely that any new small oil company could start up now in the North Sea, and those that are in there already are facing frightening financing problems. The classic illustration of this is Tricentral which was in a position of having to borrow funds far in excess of its capital base in order to continue to participate in the Thistle Field.

Keith Lewis

## Tendency

That said, it is hardly the perfect background against which the astute banker is likely to feel totally at ease. There is a general tendency for the banks to move away from the idea of project finance. For example, where the banks would a good deal of the risk themselves in return for some participation in the project. In its sort of situation, the bank early needs to have a working knowledge of the business and be able to take over in order to maintain its viability should

## Research

CONTINUED FROM PREVIOUS PAGE

and D previously lacking, search establishments, and engineering, such as seabed because of the virtual total command of the virtual total command of its £150m. energy R units under Dr. Marshall at the D budget to nationalised Harwell. The Government also hostile waters. The bulk of the funds—some £4m.—for the new research Board this year have been transferred from the Department of Supplies Office would prove too small and under-financed for the job it has to do. The 10th responsibility for seeing Government claimed that Britain had had "some considerable successes" in pioneer work on the UK continental shelf. North Sea technology, roughly halves the SMTRB's budget but leaves intact his worthwhile ventures. Plans two biggest offshore production being made to give OSO a platform's ever attempted. But submarines, search arm, whose projects it admitted disappointment. It be approved by the Off. with the reluctance of U.K. com- more Energy Technology games to move into more of the two Boards are inter- and, placed with existing re-advanced systems of offshore linked by Mr. Brookes becoming

deputy chairman of the new Board. One of the more spectacular projects funded by the SMTRB since it was set up in 1972 is the multi-purpose National Data Buoy, a floating platform for the development and testing of better techniques for weather forecasting, storm surge warning and pollution control. The buoy, 35 feet across, was launched at Lowestoft last month and will be stationed in the North Sea later this year, transmitting its data back to a shore station at the Sea Fisheries Research Laboratory at Lowestoft. Another big SMTRB project expected to be commissioned this autumn is a test rig 10 metres high and 3 metres in diameter, representing one leg of an offshore platform, which is being erected in Christchurch Bay in order to measure the wave forces imposed on a structure at sea, on a scale substantially greater than is possible in laboratory simulations. The National Physical Laboratory, which designed the project, will monitor the measurements from a laboratory nearby. An important feature of the experiment will be its ability to represent very large but infrequent waves, for which offshore structures need to be designed yet cannot easily be monitored.

Resisted

So far the SMTRB has resisted efforts to persuade it to make a major investment in advanced seabed engineering. Vickers, for example, in 1973 put forward an adventurous scheme for the development of nuclear-powered pipelaying systems for the seabed, the purpose of which would be to permit men to live and work on the seabed for perhaps several months at a stretch, well protected from the hostility of the sea's surface. It would draw heavily upon the company's long association with submarine technology, and more recent involvement with nuclear submarines and commercial non-nuclear submersibles.

Vickers has recently announced, however, that the Norwegian State-owned oil company Statoil has awarded a contract to its subsidiary Vickers Oceanics and Hydrotech International of Houston, to study the feasibility of deepwater pipeline repairs in the Norwegian trench, up to 500 metres deep. This is much deeper than either divers or the present range of commercial submersibles—Vickers now has five in service and four more being built—can reach. But its U.S. partner has been developing for the past two years a deep-water repair technology using unmanned submersibles.

## A giant offshore package from ICI

ICI is out to help the offshore oil and gas industries to meet the challenging targets they have set themselves.

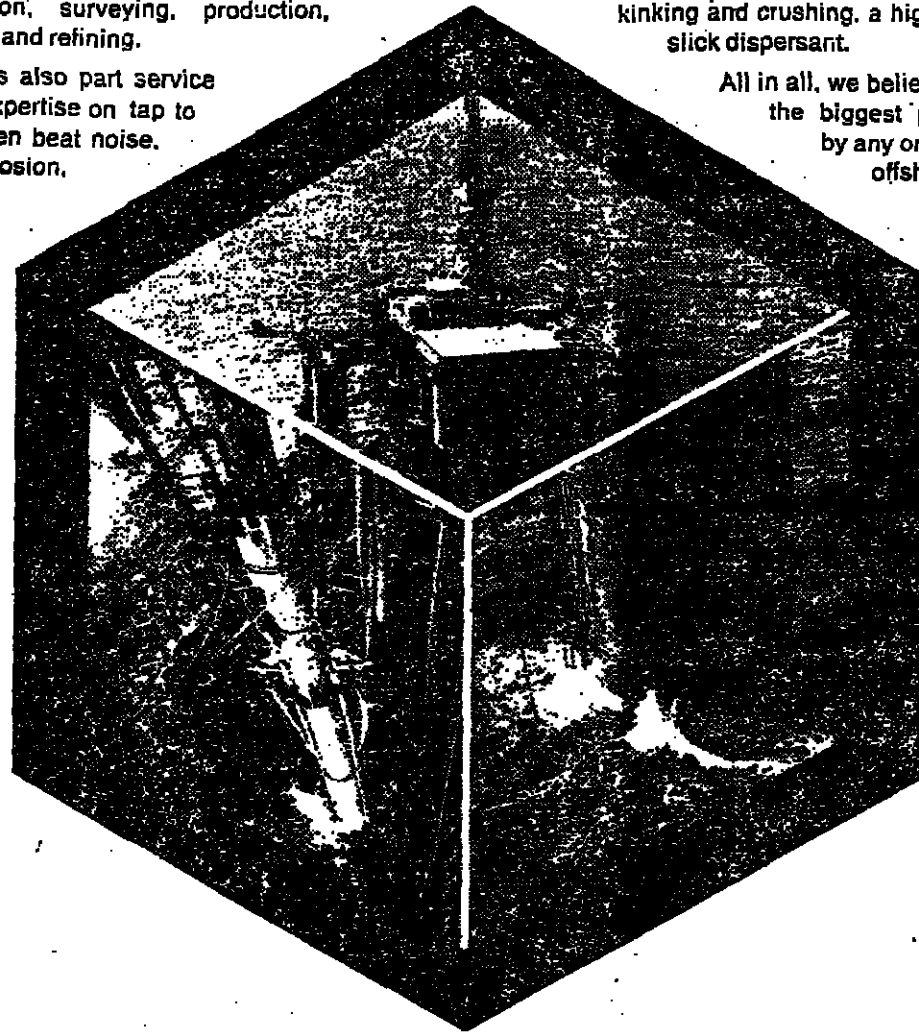
ICI Offshore is part market place, offering several hundred off-the-shelf products to operators and their contractors. Not only chemicals, but a whole range of materials, from titanium tubes to non-stretch synthetic fibre cables; needed in construction, surveying, production, transportation and refining.

ICI Offshore is also part service centre, with expertise on tap to help the oilmen beat noise, pollution, corrosion,

metal fatigue, even valve and radiator breakdowns.

Above all, it's a think-tank, bringing all the scientific and technological talent in ICI and its major subsidiary IMI to bear on offshore problems. Translated into practical terms, this means valuable innovations—such as a device to prevent sea-bed scour from undermining offshore structures, a new kind of fibre reinforcement that enables oil hoses to shrug off kinking and crushing, a highly effective oil-slick dispersant.

All in all, we believe it's just about the biggest package offered by any one supplier to the offshore industries.



And information is available from just one address:

Charles Hickson, ICI Offshore, Imperial Chemical Industries Ltd., 81, 87 High Holborn, London WC1V 6NP (Tel: 01-242 9711 Telex: 23311)



Visit us on Stand D 144 'Offshore Europe' Exhibition, Aberdeen, September 16-19.

## You're not on your own with your new venture

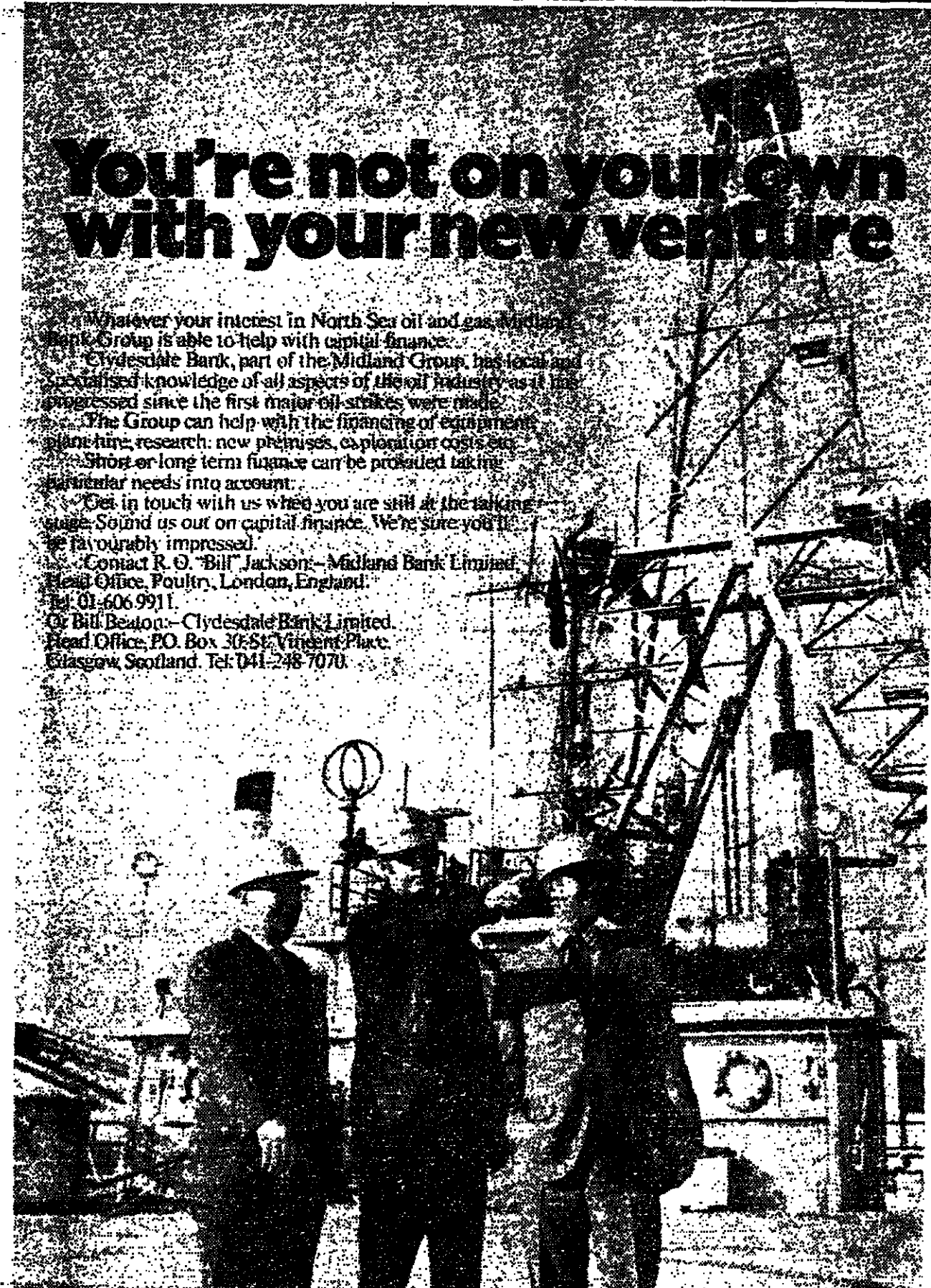
Whether your interest in North Sea oil and gas, whether you are a private individual or a company, Midland Bank Group is able to help with capital finance.

Clydesdale Bank, part of the Midland Group, has local and specialised knowledge of all aspects of the oil industry as it has been involved since the first major oil strikes were made. The Group can help with the financing of equipment, plant, hire, research, new premises, exploration costs etc. Short or long term finance can be provided taking particular needs into account.

Get in touch with us when you are still at the talking stage. Sound us out on capital finance. We're sure you'll be favourably impressed.

Contact R. O. "Bill" Jackson—Midland Bank Limited, Head Office, Poultry, London, England. Tel. 01-606 9911.

Or Bill Beaton—Clydesdale Bank Limited, Head Office, P.O. Box 30, St. Vincent Place, Glasgow, Scotland. Tel. 041-248 7070.



## Midland Bank Group

Principal trading companies include: Midland Bank Limited, Clydesdale Bank Limited, Clydesdale Bank Finance Corporation Limited, Northern Bank Limited, Midland Bank Trust Company Limited, Forward Trust Limited, Midland Mortgage Leasing Limited, Griffin Factors Limited, Midland Bank Insurance Services Limited, The Thomas Cook Group Limited, Samuel Montagu & Co. Limited (Incorporating Draxton), Draxton Montagu Portfolio Management Limited, Northern Bank Finance Corporation Limited, Midland Mortgage Industrial Finance Limited, Bland Payne Holdings Limited.

## "Oil Support Helicopters"

(Flight International, 14th August, 1975).

## Management Aviation

and its Northern North Sea Subsidiary

NORTH SCOTTISH HELICOPTERS LTD.

"Flight's" article hardly did us justice and has caused us a load of domestic trouble. Our Chairman, who's a chortle gentleman at the best of times, turned a bright shade of purple, refused to OK the Managing Director's tongue-in-cheek reply (and only in per week, I think), and told us to improve our PR or else. We've since pointed out to him that there was one mention of our name and he did like the picture. Slightly mollified, he's departed on the night of Friday, cancelling his order for a new suit and his car. He has been told to let his mistress know that he is not interested in her. We're not quite sure what he means. Nevertheless, we've been told to blow our own trumpet and blow it hard. This is difficult for quiet, modest, industrious, professional people like ourselves but we'll try. After all, we don't believe we're "way above the rest"—only way ahead of most.

Actually, with due deference to "Flight", we have no secret: it's all our own fault and we've been honest with our own people. We've always believed in keeping our heads down, in public and to hell with the glory or to put another way, what our competitors don't know won't hurt us. They might even under-estimate us, we hope.

You like that kind of policy now—after all these years of quietly making profits and slowly expanding, we've become a major operator!

## FIRSTLY, WHO ARE WE?

Despite our somewhat misleading name, we are a helicopter operating and engineering group and have been since first established in 1961 by experienced helicopter pilots and engineers. We operate, maintain, overhaul and repair helicopters, not only for ourselves but also for other people—and are both a civil and military approved operator. In terms of size and assets we are a small company when compared with the "big boys" of the UK offshore operators (who, it must be said, we secretly admire!). Nevertheless, if there is such a thing as a "big ship", we're one of them. Being No. 3 we have to try harder—we're dedicated, service oriented and flexible and work very hard indeed. We're owned by our original founders and two major British banking institutions, we have commercial and operational experience, financial muscle and are a good team. Incidentally, we've never failed to make a profit.

## NOW READ ON—

Four Air Transport Licences (Class 7) have been issued for offshore UK helicopter operations and a fifth application is pending. We hold one of them—of course, an Air Operator's Certificate. There are only three operators flying helicopters on contract in support of oil and gas exploration/production platforms and by far the largest in the North Sea. They are the Bristol Helicopter Group, British Airways Helicopters and the Management Aviation Group.

There are six major helicopter bases supporting North Sea offshore operations. We operate and manage two of these—one on the east Lincolnshire coast for southern North Sea operations, the other on the Aberdeenshire coast for northern North Sea operations. We also have base facilities in Spain, Wales for future Celtic Sea operations.

We are the only operator exclusively long-term contracted by both the British lighthouse authorities for the relief of lighthouses and light vessels around the coasts of the United Kingdom. We commenced offshore operations in 1972. We spent the next 18 months gaining experience and credibility in this role and, since then, commenced contract operations proper. We have now flown over 10,000 offshore hours and are currently flying over 750 offshore hours monthly. We operate both light and medium twin-engine helicopters (Bell 430 and Sikorsky S55ET). We have a fleet of 7 twin-engine helicopters and have just ordered 2 more. We employ a staff of over 50—managers, pilots, engineers, operations staff, ground handling staff, accounts and administrative staff. We employ 20 pilots including instrument rating holders, instructors and TRS. We have 15 licensed engineers covering light single-engine (Alouette and Cessna) and light, medium and heavy helicopters. We have our own avionics department.

## AND—

In addition to our offshore operations, we operate a fleet of seven light helicopters (Miller 12B and Bell 47 GSA) and are the U.K.'s leading helicopter aerialwork operator—more acres sprayed, more transmission line miles paralleled, more tons of construction materials unloading lifted than any other operator.

## SO—

We've hit the cat out of the bag. Now our Chairman will be happy, our Managing Director hopes he's going to be happy, our Sales Director is happier than he was, in fact nearly everybody's happy—except our Technical Director, who being a technical director, doesn't know how to be happy. And except our competitors who, we maliciously hope, are not going to be happy at all.

## Management Aviation Limited

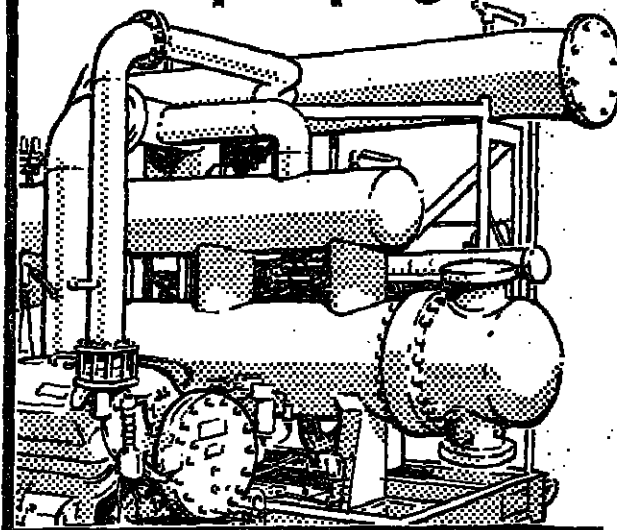
Bourn, Cambridge CB3 7TQ

David Fishlock

Science Editor



**Contact: YORK for all gas liquefaction, chemical processes, refrigeration and gas pumping**



**YORK**

**YORK**

715, North Circular Road, London NW2 7AU.  
Telephone No: 01-452 5411

**For the Offshore Industry**

**COMMUNICATIONS  
-VIA SATELLITE**

An offshore mobile terminal to be used in COMSAT General's MARISAT System — the newest advance in reliable, high quality offshore communications — on display.

Visit IMRC Stand A127

Offshore Europe '75 Exhibition  
Aberdeen, September 16-19

**COMSAT GENERAL CORPORATION**

950 L'Enfant Plaza, S.W.  
Washington, D.C., 20024, U.S.A.

**CONNECT!**

**WITH HANSEN**

\* Hansen Quick-Connect Couplings are known and trusted world wide.  
\* Save money! They stop leaks, wastage, contamination of costly or hazardous liquids and gases.  
\* What a range! Self-seal and straight-through types. Steel, brass and stainless. Choice of seal materials.  
\* Strong — you name it! Useful graduations — up to 3".  
\* EX-STOCK DELIVERY  
\* For technical advice and latest information contact—

**GUYSON**

**GUYSON INTERNATIONAL LTD.**

North Avenue, Ormskirk, Lancashire, L23 7AB. Tel: 0507 2422. Telex: GUYSON 21342

**KINGSTON**

**THE  
BEST IN FISHING MAGNETS**

KINGSTON INSTRUMENT CO. LTD.  
COX LANE, CHESSINGTON SURREY

## EUROPEAN OFFSHORE TECHNOLOGY XII

# Warranty from Lloyd's and other societies

IN THE POPULAR mind the name of Lloyd's Register of Shipping stands for organisation which inspects and classifies ships as A100 or not, as the case may be. And so it does, together with the other well-known classification societies, such as Norske Veritas of Norway, the American Bureau of Shipping, the French Bureau Veritas, the Germanischer Lloyd, and the Hellenic Register of Shipping.

But these organisations do very much more. They supervise, classify and certify with their warranty the quality and standard of virtually every branch of heavy and quality engineering upon which the safety of people depends. These interests range from bridges, from oil-pipe installations to water treatment plants and nuclear power plants and now—one of the fastest growing sectors of their business—to offshore oil and gas rigs and production platforms with all the ancillary services involved.

Though the standards of all the classification societies are high, and must be, so also is the keenness of the competition among themselves for business and Lloyd's Register is proud of the fact that it is now certifying 75 per cent. of all North Sea structures, Norske Veritas, in the Norwegian sector of the North Sea, has similarly high standards and for work in both the British and Norwegian sectors, together with the other societies.

It was only in 1971 that Lloyd's Register of Shipping formed an Ocean Engineering Group to deal with the many varied types of structures and equipment being used or contemplated then for offshore exploration. These included drill rigs, hopper barges, dredgers,

underwater pipelines and storage tanks, mooring systems and age tanks, mooring systems and concrete production platforms coming into operation in the North Sea. The work includes underwater inspection and repair.

At that time, rules for the construction and classification of mobile offshore units were published detailing standards of structural design, steel deck, deckhouses, machinery, electrical equipment and fire protection, taking into account the then latest views of the International Maritime Consultative Organisation (IMCO), a branch of the United Nations. The rules based the classification of the rig on the maximum operational requirements specified by the owner or designer, rather than specific geographical locations.

### Toughest

The North Sea, however, has proved to be about the toughest environment in the world for offshore exploration, supply and development and last year Lloyd's Register was appointed by the U.K. Government as a certifying authority to ensure that equipment used in the British North Sea sector complied with the Government's new Offshore Installations (Construction and Survey) Regulations.

The Offshore Services Group was formed by Lloyd's Register in 1974 to co-ordinate the society's greatly increased services to the offshore oil and gas industry throughout the world. The group includes the Ocean Engineering Department formed in 1971 and is responsible for all certification and

classification work on fixed and mobile drilling and production platforms, site assembly and in-service inspection. The classification and design appraisal of manned and unmanned submersibles is also undertaken.

As a certifying authority Lloyd's Register's Offshore Services Group, therefore, last year commenced the certification of over 60 existing North Sea drilling and production platforms located in all the major fields of the North Sea U.K. sector.

One of the major events last year for Lloyd's Register was the successful emplacement of "Highland 1" and "Graythorp 1" at British Petroleum's Forties field. Both platforms were classed and certified by the society, which appraised the preliminary work design and safety aspects, inspected the steelwork and materials used and finally checked the arrangements for towing out and emplacement. The operation of tilting the 23,000-ton platform "jackets" through 90 degrees and lowering them vertically to the seabed "was an engineering success story and proved without doubt the feasibility of huge steel jacket installations," says Lloyd's Register.

Also during the year independent fatigue and static analyses were carried out on steel platforms for Amoco, British Petroleum, Occidental and Shell. The Offshore Services Group is also carrying out the design appraisal and certification of concrete platforms. It is a measure of the competition between the societies that Lloyd's Register was employed to certify the concrete gravity platform built at Andalsnes, Norway, for Total Oil Marine. The need for such a certifica-

tion process in the hostile environment of the North Sea was proved by a confirmation although several conversions scrupulously," said one source. The North Sea apart, a classification societies are in business everywhere in the world. Lloyd's and the major societies have branches and committees in every world marine centre, indicative of the competition element that Lloyd's Register places upon the classification societies is not difficult to explain. Their existence depends upon their experience, expertise, caution and reliability. The finest marine and other engineers and surveyors are recruited by the societies and they are willing to be recruited.

Our existence depends on our reliability as engineers," said one source. The North Sea apart, a classification societies are in business everywhere in the world. Lloyd's and the major societies have branches and committees in every world marine centre, indicative of the competition element that Lloyd's Register places upon the classification societies is not difficult to explain. Their existence depends upon their experience, expertise, caution and reliability. The finest marine and other engineers and surveyors are recruited by the societies and they are willing to be recruited.

James McD

**FOR 25 YEARS** we have provided a wealth of skilled manpower services to the oil industry and its associated fields of construction.

Perhaps we can help you. We would welcome your enquiries.

Overseas Technical Service (Harrow) Ltd.,  
5 Welldon Crescent,  
Harrow,  
Middlesex HA1 1QX.  
Tel: 01-863 8892  
and 8893.  
Telex: 922176.

**J & N Wade**  
GROUP OF COMPANIES

**SPECIALISING IN THE DISTRIBUTION  
ELECTRICAL CONTROL GEAR and FITTINGS  
to the OFFSHORE OIL INDUSTRY**

Please contact:  
NORWICH 43741 PORTSMOUTH 60221 NEWPORT  
LONDON 01-458 3311 NORTHAMPTON 34202 LLANEL  
SOUTHAMPTON 04215-47411

**REML**

**RESOURCES ENGINEERING  
&  
MANAGEMENT INTERNATIONAL LTD**

ENGINEERS, CONSULTANTS & PROFESSIONAL MANAGERS

■ Geology ■ Geophysics ■ Drilling  
■ Production Operations

Old Clock House, Ascot, Berkshire SL5 7HB, England  
Telephone: (0890) 24731/37 Cables: REMUK ASCOT  
Telex: 847014

A new industry — A new team  
**McGEOCH  
& CROON LTD**

P.O. Box 10, PETERHEAD.  
Telephone: Peterhead 6386.

**ELECTRICAL ENGINEER  
to the  
MARINE & OIL INDUSTRY**

The marine expertise of McGeoch  
+  
the offshore oil experience of Croon  
at your service

### Dominant

The British insurance market, both Lloyd's and the companies, have played a dominant role in the provision of insurance for offshore technology, with the U.S. market having a secondary place. Many of the leading insurers in these contracts are British, but such is the spread of underwriters on each contract that the world market is involved. While some countries insist on having the insurance risk placed with a local company, most of that risk finds its way to the London market in the form of reinsurance. The sector of the insurance industry has been the faster growing specialist area in the past decade and is likely to continue to expand as offshore exploration widens its operations.

Eric Short

## The insurance risk

THE OFFSHORE technology industry has only been in existence for a comparatively short space of time, about 25 years. Yet its insurance requirements have made a considerable impact on the world marine insurance sector. Those needs have not in themselves introduced any new principles, but the size of individual risk now required was possibly never envisaged at the start.

In the early years when the installations were being put up in the very shallow waters of the Gulf of Mexico, the cover required for each unit was in the order of U.S.\$2.5m. Now a modern deepwater installation will require physical damage cover alone of at least U.S.\$400m. This is at least five times greater than the largest insurance placed on a land-based industrial complex.

Multiply this value by the number of offshore installations—exploration and production—operating in the free world and the sum of the cover required is staggering. It is pushing against the ceiling of the capacity of the market to accept this insurance even on a world-wide basis. No other single industry has imposed such a strain on world insurance capacity.

### Smaller

Secondly, the nature of the risks has not been encountered before by the underwriters. At the start they were having to rate more by instinct than experience. But now they have been writing the risks for long enough to acquire sufficient data to underwrite the risk following usual procedures. Even in the North Sea, operations have been

proceeding for 10 years and this has enabled underwriters to build up an experience pattern.

The need of the offshore operator for full insurance cover is paramount. The outlay is enormous and is done mostly by continuous and heavy borrowing. The recouping of this money does not come until the oil starts to flow several years later. The delay in getting the oil flowing adds considerably to costs simply from the extra time while the loans are being serviced.

Only the very largest operators with a world-wide spread could hope to stand the risk themselves. The self insurance principles that are being increasingly applied by the large multinational industrial organisations have to be confined to the smaller risks involved.

The insurance requirements of offshore installations can be broadly divided into two categories, material damage and liability insurance. The first covers the drilling unit and all support craft. The second is mainly concerned with the liability to third parties and to the personnel employed on the rig and in ancillary operations.

Generally, it is the contractor that takes out cover for material damage on the widest possible range. Risks include the damage to the rig itself due to bad weather and heavy seas. Should the rig break from its moorings then there is the further possibility of fouling adjacent rigs and shipping. Should the rig be wrecked then the wreckage has, by law, to be removed from the sea bed.

Most explorations are underwritten by consortia, and the operator with the largest share

usually undertakes the responsibility of making the insurance arrangements. The insurance manager of this operator will be the person who contacts the insurance broker and arranges to collect all the necessary information.

For such complex insurance arrangements that are required by offshore installations, the services of an experienced insurance broker are necessary at a very early stage. This area is predominated by two leading brokers—Sedgwick Forbes and Bland Payne—which between them have over 80 per cent. of the market. They have been in this field from the beginning, building up specialist departments and acquiring considerable expertise. Other brokers now entering the field play a very minor role.

### Demarcation

The broker will materially assist in the design of the insurance package. This must be all embracing, covering the whole operation and everything involved. Then the broker will approach one or two leading underwriters to discuss the contract with a view to agreeing the terms and deciding on the premiums to be charged. Such is the size of the risk that cover has to be spread among literally dozens of underwriters. The leading insurers will take about 3 to 5 per cent. of the risks directly, but often will reinsure part of this anyway. Often there will be an excess loss exemption by the underwriters, leaving the actual excess loss to be covered by the specialist insurers. The underwriters will look at

## STRATHCLYDE

Scotland's launch platform to success in North Sea Oil.

Covering 5,348 square miles Strathclyde is the industrial base for success in your North Sea Oil operations.

Its vast potential for expansion is second to none in Scotland—and it's yours for the asking. Strathclyde already supplies drillships and oil rigs and can now offer 4 sites for the manufacture of oil production platforms at: Ardroyne Point, Campbeltown, Hunterston and Portavadie.

Opportunities exist for all kinds of supporting manufacturing industries. Strathclyde's reputation for heavy engineering, shipbuilding and specialised engineering of all kinds are at your service. Add to this the region's wealth of skilled and adaptable labour, its advanced technical education facilities and the superb natural recreational amenities and you have a total package, second to none.

**SUPERB COMMUNICATIONS**  
By road, rail and air, Strathclyde has superb links with London and most other major cities in Britain. For free Prestwick Airport operates direct flights to USA, Canada, the West Indies and Europe.

**SITES & FACTORIES**  
We'll be glad to give you access to the Industrial Register of Sites and Premises covering the region, advise on finance and help in any other way to quickly formulate your plans.

Find out more about Strathclyde's platform to success in North Sea Oil.

**STRATHCLYDE INDUSTRIAL DEVELOPMENT**

21 Bothwell Street, Glasgow G2 6UJ. Telephone: 041-221 4296.





Electronic watches have begun to seem a real threat to makers of traditional timepieces. Arthur Sandles assesses their impact so far

# A question of time for clockwork

IT IS a tiny shop. The man who depends on the fact that, with a tiny turning round in the narrow space behind his counter, enough his traditional watchmaker's stoop makes it easier for him to get through the low door of his workshop. Two weeks ago a customer came in with his wife's watch for repair. As he handed it over his own watch caught the shopkeeper's eye. Here was a moment of examination, and then a sigh.

"That," said the watchmaker, pointing at the electronic watch on the man's wrist "will put the lot of business within five years."

Perhaps he was being pessimistic. Certainly there are few more of the giant watchmaking shops of Switzerland, the U.S. or Japan who feel that electronic watches will sweep aside traditional product lines.

Neither system is entirely satisfactory. The LED watches, which have the lion's share of the business, have two major drawbacks. Normally the wearer has to use two hands in order to tell the time because he has to push a button in order to get a visual display. And this display is not very readable in bright light. The reverse is the case with LCD watches. Although their display tends to be larger, and no button pushing is required, the LCD face is extremely difficult to read in anything but good light. In spite of these drawbacks both have two massive advantages over the conventional watch. They are inherently more simple and reliable, and they keep much better time than anything else on the market.

Even the modest invasion of digital watches recently has caused shock waves throughout the traditional time-keeping industry. Time's U.S.-owned company which is Britain's only large-scale manufacturer, in the midst of management reshuffles, seemed to have been caught on the hop and shown either caution or indecision according to your viewpoint. Bulova, too, the U.S. company which has long dominated the medium-priced accuracy market, has been uncertain about the real strength of the new competition, but has now finally taken the plunge. The Swiss, in general, who still account for 40 per cent of world watch sales, are swinging from public aloofness from all this new fangled gimmickry to assertions that they have been doing research all along and are well placed to meet any changes in market place tastes.

Although not a particularly



The traditional watchmaker at work. His expertise is unlikely to be redundant for a long time, but it is being threatened already as digital watches become cheaper.

world standards, the U.K. has a market which is probably worth more than £100m. a year, with Time's accounting for about one fifth of that. The rest is imported, although much comes in component form to be assembled by such companies as Smiths Industries. Last year Britain imported complete watches and clocks worth around £82m., of which a little under half came from Switzerland.

Until recently the main threat to the Swiss on the world markets came from Japan and the Soviet Union. Competitive pressure from the Swiss has been the continual rise in the value of their franc, an upward movement which has made life extremely difficult in what is a high price sensitive business. To this has been added competitive pressures, notably from

and Instrument, previously little involved in the consumer electronics boom, have leapt into the fray.

For some the plunge is quite heavy. Japanese sources (crystal oscillators are bought from Japan) indicate that Texas Instruments is planning to produce at least 100,000 digital watch modules a month. This may not bother the Swiss, but it has certainly raised some concern in Japan, where giants like Seiko (already a huge producer of electronic watches) are seriously worried that American mass production of the crucial semi-conductors will give them considerable pricing difficulties. There is already talk of the American companies setting up foreign assembly plants in order to put their expensive modules into attractive cases.

The semi-conductor giants are not selling under their own names but offering products to others. Integrated Display Systems is reported to have a joint project with the Bulova company, and is also co-operating with Gillette which, having successfully spread itself from razors to basic toiletries, is now looking for other areas of diversification.

There are more than 100 electronic watch brand names on the market, which suggests that a sizeable shake-out is due over the next 18 months. The pace has already proved too hot for the one potential British entry, Smiths Industries, which, partly because of difficulties over supplies from the U.S., decided that the investment was scarcely justified.

Already some form of pattern is emerging. At the top of the market are names like National Semiconductor, Hughes Aircraft, and Fairchild Camera

and Instrument, previously little involved in the consumer electronics boom, have leapt into the fray. Texas Instruments is offering watches from £25 up, while at the lower end of the market there is Litronix with a usual price about £25. This is getting closer to the Timex norm of £10 or even less, and in the industry it is now being suggested that over the next four years the digital watch base price will have tumbled to £15 (clearance offers will, of course, produce much cheaper bargains from time to time) while the mechanical watch will have climbed to that level. As one American stockbroker put it in talking about Timex: "When you have half the market, the only way you can go is down."

Even when the display problem is overcome there remain two question marks. The first concerns the willingness of the public at large to switch from conventional watch hands to a railway timetable style display of numbers, though this may not be as big a hurdle as it may seem. The second is the importance of the watch as a piece of jewellery as opposed to a time-keeping device.

## Accuracy

Few companies—with the notable exception of Bulova and, perhaps, Omega—have put the emphasis on accuracy as a selling point. For the average watch purchaser is much more concerned with the appearance of what he is wearing than the way it tells the time—give or take the odd few minutes a month. Thus, once the module price comes down to mechanical levels, the electronic watch could be competing with the mechanical one simply on appearance.

Nonetheless, these are but early days for the electronic watch business, and the stooping watchmaker may have a great deal longer than five years before his expertise is redundant. It is hardly likely that the world is going to throw away all its mechanical, and electrical, timekeepers just because solid-state space wizardry has arrived.

## New range

Timex does not see it entirely in the same light. It is planning another range of electronic watches for early next year (with the launch possibly even coming in time for Christmas). This will be the group's third attempt to break into the digital business and will be by far the most serious. Component orders have already been placed and Timex would seem to be moving as far back along the production line as it can, without actually making semi-conductors and crystals. It will produce its own modules, and has settled on the continuous display system.

This, with clarity at least equal to usual mechanical watches, would seem to be the key to major success in the digital watch business. Even has arrived.

## Concern

The intriguing factor is the new names which have come into the business. Companies like Texas Instruments, National Semiconductor, Hughes Aircraft, and Fairchild Camera

## Letters to the Editor

### Political impotence

Mr. Ivor Gwynne.  
Sir—Can any thinking person have a love for democracy fall by the wayside? I am concerned by the picture Rogaly (September 9) so accurately presents of the erosion of Parliamentary progress. What is this happening as the result of the very best motives, no less cause for concern: need for that very reason the it is so much less apparent, and much more insidious. We have become accustomed to accepting the need for the political system, and the manipulation of the expression true democratic principles that suits from party politics, in the belief that government would be possible without an ascendant faction. That this faction should be manipulated compounds injury, and lays bare the final sin. The problem is what to do. In arena we cannot look to our "asters" for help, and any action would have to come from the small and large "P" wings of the term. Who would, and what methods should be used? Rogaly has stated the question. Can he now make tactical suggestions for finding the answer?  
Gayus.  
Sternage Road, S.W.6.

### Bring back democracy

Mrs. Joyce Leigh.  
Sir—Thank you for Mr. Rogaly's interesting article on lost democracy (Sept. 9). Could you now find somebody to write an equally interesting article on how we get it back? The real majority (employed, paying, non-TUC, non-voter) is very aware of problem: what we really need me advice on a solution. So instead of telling us all the tail is wagging the dog could assist by finding some who can tell us all how to the dog regain control of its tail appendage.  
e Leigh.  
over, 2, Farm Road, Church, Bucks.

### Strikers' benefits

Mr. R. F. C. Davis.  
Sir—I found myself in a bit of a depressing and disturbing mood when I read Mr. Rogaly's article on Sept. 9 about the decay of democracy in this country. But I do not examine further the political scene, have recently lost the will to serve people and substituted for it a keen willingness to serve interest groups. I am over a quarter of a century old. I have done this in many of my one instance. I have almost always seemed to be part of the support for the support given to CCA in your Editor's (September 5) is very welcome.

However, you suggest that the Sandilands recommendation No. 7 (PSSAP 7) should suffice for CCA should become mandatory in just over two years is unrealistic because it allows insufficient time for the preparation of valuations and indices. In fact, the Report proposes that CCA should apply to all accounts beginning after power at the date of the accounts. This implies a challenge to the damage to their pockets substantially enhanced by the "security" payments (Nominally to their families), PAYE rebates and the like. They are therefore more willing to support a strike call from their leaders without any serious consideration of whether it is justified, or even in their interests. "Blind" leaders have learned from repeated experience that strikes—particularly in the public sector, where the extent and speed of damage to the community is likely to be greatest—usually succeed in their purpose. Indeed, the threat may be all that is necessary.

### Union elections

From the Head of the Research Department, Electrical, Electronic, Telecommunication and Plumbing Union.  
Sir—Joe Rogaly (September 9) claims that "election on a desirous vote, often for life, was the method of accession to power of nearly every one of the powerful trade union bosses." The General Secretary and the Executive Council of the EETPU are elected on an individual postal ballot of the membership and subject to re-election every five years. This may be untypical but should at least have been noted.  
John F. Spellar.  
Hayes Court, West Common Road, Bromley.

### Accounting for inflation

From Mr. S. L. Perkins.  
Sir—The system of current cost accounting (CCA) proposed in the Sandilands Report is a significant improvement on present historic cost or current purchasing power systems, and the support given to CCA in your Editor's (September 5) is very welcome.

### Weakness of Sandilands

From Mr. Peter Reynolds.  
Sir—The Sandilands Report is a substantial document and I doubt whether casual readers like myself will find time to read it all. Nevertheless, I have discerned some disturbing features from dipping into the report and from the ten or so published commentaries that have come my way. The authors have apparently overlooked the fact that published accounts normally show comparative figures for the previous year. The 80-page appendix illustrating Current Cost Accounting (CCA) over a ten-year period does not include any balance-sheet or profit-and-loss account with "last year" figures. To do so would involve facing up to the problem of converting the historic money figures to a basis that is comparable with the later year. In the unique case of a five-year summary of dividends, the example (in the final table A2/51 of this appendix) does convert past years' figures to current purchasing power by reference to the Retail Price Index but (at paragraph 626) it is asserted that this index is unsuitable for converting other summary figures and any other basis of conversion would be too complicated. So far as five-year summaries are concerned, the proposed solution is to list ratios rather than values, but ratios wholly divorced from values can be dangerously misleading; a high percentage or a large change in a percentage, may be less significant than a smaller ratio or change applied to a larger base figure.

3.—The mechanics of the annual asset revaluation at the heart of the CCA proposals depend on unknown tables of asset-specific index numbers. Should the tables be less than satisfactory, the system will fail. 4.—In spite of the delays and uncertainties that the above proposals must occasion, the Report urges a rapid decision to adopt its recommendations. That decision must not be allowed to precede widespread understanding of what it involves and implies. 5.—What appear to be the two main elements in the Sandilands recommendations are: (1) Annual revaluation of fixed assets, with associated adjustment of depreciation charges. (2) The separation of holding gains from operating profits. Both are, I believe, compatible with and permissible under the existing Current Purchasing Power (CPP) accounting and relatively small amendments to the Provisional Statement of Standard Accounting Practice (PSSAP 7) should suffice to incorporate them.

6.—Unfortunately Sandilands, while accepting that PSSAP 7 has been useful, now rejects the underlying concept of translating pertinent values of past years into current purchasing power at the date of the accounts. That implies a challenge to explain the process better, but the case for including some current purchasing power adjustments in accounts is very strong. Revaluing the assets may throw up a meaningful profit figure for the year, but it cannot be compared with the profits of earlier years unless all are expressed in a common unit of purchasing power. Such comparison of figures from year to year is one of the most reliable ways of reading accounts when many elements are necessarily valued subjectively, but the principle of consistency ensures that the same kind of subjectivity is applied each year. In my view, neither CCA nor CPP is perfect and a marriage of the best in each offers hope of a reasonable solution to a very urgent problem. Peter Reynolds.  
65, Claremont Road, Tunbridge Wells, Kent.

### On the right lines

From Mr. H. W. Wilson.  
Sir—The National Council on Inland Transport and the other railway pressure groups are hardy going to have to work hard over the next few years to persuade a decreasingly less reliable tax-paying public that British Rail's subsidies of £300m. a year represent money well, and fairly, spent.

For years Mr. R. Calvert of the NCT has been searching for a formula to try to prove that the Exchequer's net cash surplus on road transport of £500m. (give or take £100m. or so) is somehow not a surplus. It is not matter how the figures are juggled, a cash surplus is a cash surplus. It does not matter how one plays around with accident costs, lorry parking or the figures, the enormous chasm between road and rail profitability just cannot be explained away any more by the anomalies of their different ways of financing. It pains me to say it (because my father was on the Great Western Railway for over 20 years) but the question we ought to be asking now is: "Can this country afford a railway system at all?"

While the railway enthusiasts, and their new allies the conservationists, have for years been bleating about the need for "integration," the sad fact is that the railways (which always needed roads to complement them) are rapidly becoming irrelevant in many parts of today's national economy. Apart from some specialist traffic (and I suspect that it is even less than normally assumed) the railways are irrelevant in general freight. We are not told very much about their container traffic, so one suspects that it is not economic. Inter-city passenger traffic could just as effectively be carried by aircraft and coaches. As for the great white elephant of the south eastern commuter transport, it beats me what "social" purpose is performed by extracting still more taxation from the Scots, Welsh, and Cornishmen (who often have no public transport of their own) in order to pay out to relatively wealthy South Easterners. (Of whom I am one).

Let's face it, British Rail is like a tired old horse. It has served us well in the past. It has had, at vast expense, a fairly comfortable ten years out at grass, but really the kindness to the knacker's yard. Hugh W. Wilson,  
8 Hospital Hill, Watlington, Chesham, Bucks.

### Rail service reopens

INTER-CITY passenger trains are to run again on the Ladybank-Newburgh-Perth railway line for the first time in 20 years. From October 6, Edinburgh-Inverness daytime services will be re-routed through Fife—calling at Inverkeithing and Kirkcaldy—and provide a direct rail link between Fife and the North of Scotland.

GENERAL Speech by Mrs. Margaret Thatcher, Conservative leader, to Institute of Social-Economic Studies in New York. Meeting of EEC Foreign Ministers in Brussels. Mass meeting of British Leyland bus and truck division on pay. OFFICIAL STATISTICS Retail trade (August-prov.). Turnover of catering trades (July). COMPANY RESULTS Telephones (full year). BBA Group (half year). Rolls-Royce Motors Holdings (half year). Unicorn Industries (half year).

### To-day's Events

United Biscuits (Holdings) (half year). COMPANY MEETINGS See Week's Financial Diary on Page 28. CONFERENCES British Veterinary Association, York University. Public Libraries, Eastbourne. EXHIBITIONS Plant Engineering and Maintenance, Earls Court. Royal Navy Equipment, Greenwich. BALLET London Festival Ballet—Dances from "Napoli" Prodigal Son, New Victoria Theatre, S.W.1, 7.30 p.m. MUSIC St. Lawrence Jewry Next Guildhall, Piano recital by Tessa Nicholson, 1 p.m. Wigmore Hall, Piano recital by Teresa Escandon, 7.30 p.m. St. Augustine's, Kilburn, Choir of St. John's College, Cambridge, conductor, George Guest. John Scott (organ). Alan Civil Brass Ensemble, 7.30 p.m. SPORT Racing: Goodwood, Edinburgh and Wolverhampton.

The Sumitomo Bank, Limited

Osaka, Tokyo, Kyoto, Kobe, Nagoya and other major cities in Japan











David Palmer has just completed a 1,100-mile solo voyage from the Azores to the Scillies in the trimaran FT as his qualifying sail for next summer's single-handed transatlantic race.

## The loneliness of the solo sailor

I LEFT Horta in the Azores at mid-day on Sunday, August 24. The sun was shining, there was a gentle southerly breeze, the weather charts indicated it should have steady following winds the whole way home. I looked forward to a fast, steady passage, and a landfall in England in possibly as little as a week. In the event, it took me nearly double that time—121 days.

My first reaction to being alone was all the more curious for being totally unexpected. For years now—since a close friend was drowned 15 yards from a rescue boat—I have always sailed wearing a life-jacket. Within an hour of leaving the Azores, I had twice looked at the lifejacket hanging in the oily locker, and rejected it. There was no thought behind this decision. It was a purely subconscious acceptance of the worst fear that any single-hander lives with—that of falling overboard. When she is moving FT is usually going at a minimum of six knots. If she and I part company, her self-steering will keep her going, and there is no way in the world that I will ever get back to her. A lifejacket would not make the slightest difference. It would merely prolong the agony as she sailed herself away over the horizon.

### Alarms

As dusk fell on the first night at sea, I was heading north-east under spinnaker with the lights of the northernmost Azorian island on my starboard beam. My electric self-steering was keeping an accurate compass course, the wind was steady, and I decided to go to sleep leaving the spinnaker up—a thought that had given me nightmares before I set out. I set my two alarm clocks for one hour's sleep, led the spinnaker sheet to within a few inches of my head so that in an emergency I could let it go quickly and collapse the spinnaker, and put my head down. Several hours later, after sleeping through both alarm clocks, I woke up with a start. Something was different. When I had gone to sleep, FT had been moving at about four knots. She was now moving at 91. The wind had risen to force 4, the moon was still out, the self-steering was keeping her on an absolutely steady

course, and the boat was in one of her happiest moods. I stayed on deck five minutes, watched the her behaviour in the gusts, and again went back to sleep.

For two days it was like that—steady but non-violent following winds. After two days I had done 300 miles; after three days nearly 400. But the first ominous signs of what the rest of the journey would be like were beginning to come in. The weather was beginning to break and I had picked up the BBC shipping forecast which was talking about north-easterlies.

### Flat calms

North-easterlies. That was dead against me. The weather chart told me I had a 70 per cent. chance of westerly winds, which was just what I wanted, and a 3 per cent. chance of north-easterlies. But north-easterlies it was to be—almost a day of calms, when I moved only 30 miles, then a front moved through, bringing with it a day of constantly changing wind strength and direction which kept me on deck all the time, changing sails, altering course and getting almost nowhere. Then the wind gradually freshened from the north-east, bringing with it a confused, breaking sea and rising to near-pale force. Finally, the sea died down, the wind settled back to force three, and I started pushing north to what I hoped would be westerlies on the western side of a high that the shipping forecast promised was passing just to the north of me. I did not meet those westerlies for another four days.

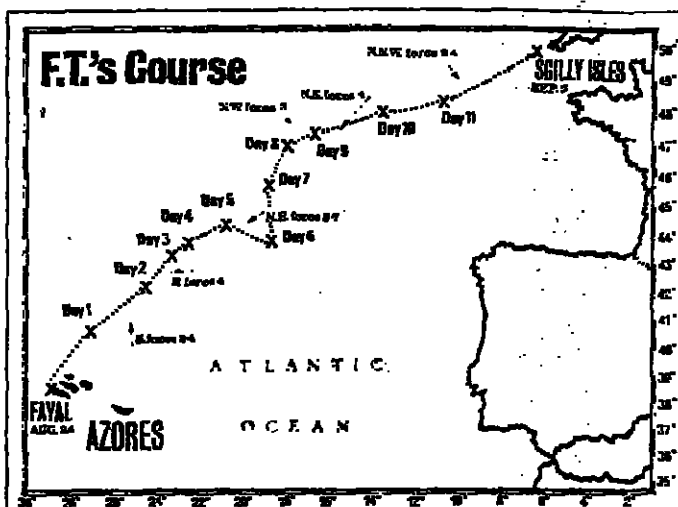
After a week at sea, I took careful stock of what was happening to me. The first and most pleasing discovery was that loneliness was hardly affecting me at all. I wrote in the log: "My biggest problem is to convince myself that I am alone at all. I keep a constant dialogue going with myself that has practically created two people. At night, when I wake up and try to concentrate on a decision, I often catch myself assuming there is someone up

on deck looking after the boat. A couple of times I have heard people talking—the usual tricks the wind plays in the rigging. Otherwise, I appear to be reasonably and happily sane in control of the boat, and far from going round the twist, to be thoroughly enjoying the trip."

Twenty-four hours later found quite a different sort of entry in the log. The wind had died in the middle of the night. All day I sat idling in the ocean with the sails down, searching the sky for any sign of wind. "Intense depression is setting in," I wrote. "I am fighting off

### Standstill

The second persona then began to take over. I began to take six, seven and even eight hour sleeps, without setting the alarm at all, relying on the boat to wake me up if something changed. One night, I woke at precisely the moment that the



with no success at all, waves of self-pity and paranoia. I am going to be late, my wife and family will start worrying, and I cannot get in touch with them."

### No decisions

The trouble with no wind is that there is nothing to do, no decisions to take. As long as there are, then I found plenty to talk to myself about. I was curious to find that I had split myself into two quite distinct parts of my personality. On the one side was the bit of me that always wants to do things two minutes before I first thought of them, which put up all the suggestions and was constantly urging action. On the other

was an altogether more circumspect individual, who liked to weigh up decisions before acting on them and was for ever playing devil's advocate to the first. Last year, on the only other single-handed sail I have ever done, I became so tired that my brain literally stopped function-

ing. It happened at dawn one morning after I had been up all night. I found myself a mile from the Lizard, and totally becalmed. Suddenly I noticed a model ship passing me just a few yards away; then another, then what looked like a model of the Mayflower. Funny, I thought to myself, there must be a model ship rally out of Falmouth. Then, for a few brief seconds, my eyes focused properly on the ships. They turned out to be full size, two or three miles away, and the Mayflower was indeed a replica, with full sail up. Within seconds, my eyes were again sending false messages to my exhausted brain, and I was again seeing models. I was so tired, I could not even persuade myself to put the anchor down. I just have to and collapsed. Three hours later, I woke to find myself just 200 yards from the Lizard rocks.

### Traffic

On this latest trip, I was never in any such danger. But I became extremely concerned at the prospect of the last day's sailing as I entered the Western Approaches. Single-handed sailing involves a series of calculated risks: the risk of falling overboard, of falling ill, of breaking up or capsizing without having time to radio for help. The worst of these risks is the danger of collision.

In mid-ocean, the odds are pretty good. I was sighting an average of one ship a day. The chances of that one ship being on a collision course with me are very small. The chances that he will not pick up my radar reflector on his radar screen nor see my lights make the odds even better. I am keeping a close lookout for roughly three quarters of the day, which reduces the odds further still. The odds against a mid-ocean collision are several hundred thousand to one against.

All that changes as you approach land. You start meeting fishing boats, with no radar, poor lookouts, and a sublime reluctance to alter course. The number of boats you meet rises exponentially as you near land, and the odds shorten accordingly. On this trip, virtually all the equipment I was carrying to keep the odds at acceptable

lengths had ceased to work—the hurricane lamp's plunger turned out to be rotten, and I could not pump pressure into it; the generator for the batteries broke down totally, and my secondary generating system was only half working and I found on leaving the Azores that one of my two batteries had gone totally flat within a day of being recharged.

Faule de mieu, I was having to rely at night on my navigation lights, and to hope that the single battery I had left would survive as far as the Channel. Even then, I knew that it would not be safe to rely only on those lights. I would have to stay awake all night and sleep during the day; and whenever I slept, I would have to keep waking every half hour to check for other shipping.

In the event, my last day's run into the Scillies was an exceptionally good one—I made just under 200 miles in 31 hours, and I arrived at dusk. It was just as well. The zephyr that drifted me into the Scillies died within an hour of my arriving and there was no more wind for 16 hours and the battery ran out of juice the next day. If I had not made the Scillies that evening, I would have been in the worst possible position—near the shipping lanes, windless, with no lights, my torch batteries all virtually dead, and myself already very tired from having pushed the boat as hard as I could for the past two days.

### Full moon

One incident which must be mentioned took place at 2 a.m. on a bright, starlit night, with practically a full moon. I was standing on the boat's counter, almost at the stern, trying to persuade the hurricane lamp to work. Suddenly I heard a long and very loud snarl, followed by an equally long exhaustive noise, something half way between a sigh and a wheeze. I found myself standing rigid, clutching the backstay, and then cautiously returning to the cockpit—on tiptoes, of all things. Then I heard the noise again, from the direction of the moon. I looked along the shimmering surface of the water to see, silhouetted against the moonlight, the back of a huge whale. It rose to the surface, had a brief look at me, and dived back again into 15,000 feet of endless ocean.

### CONTRACTS

## Hytrac Conveyors wins £1m. order from Rank Xerox

HYTRAC CONVEYORS, of Leicester, has been awarded a contract worth approximately £250,000 for the design and installation of an integrated overhead handling system at Rank Xerox Welwyn Garden City plant.

SHAWLOADERS, of Bailey, Yorks, has received an order worth £100,000 for five model 90s and one model 860 sideloader fork lift trucks from Jabore Port Authorities, Malaysia. The trucks are to be used in the Jabore Port storage yards and warehouses for general handling applications.

A contract worth more than £50,000 for a PABX Crossbar switchboard system has been awarded to TELEPHONE RENOVATIONS by Suber Brothers (London). The 280-line installation is for Suber Brothers' new premises in Farnborough, Hants.

BOWMAR INTERNATIONAL (MARSCO INTERNATIONAL) has received an order from Shell for an electrical crude oil dehydrator/desalter to be installed on its Cormorant field offshore production platform.

Lowmar International has also received an order for three electrostatic fuel oil treatment plants from Alsthom, the French licensee for General Electric gas turbines. These plants, which will be engineered in England and fabricated in France, will be installed in Indonesia at three power stations operated by PLN, the Government electricity authority.

DENVER METAL WORKS—Anglo-American group's manufacturer of non-ferrous castings, extrusions and stampings—has concluded a contract with Peter Crowe and Co. of the U.K., whereby the latter is to become Denver stockists for continuous cast phosphor bronze in that country. Denver Metals anticipates that sales stemming from the contract—which was concluded in conjunction with its agents, Continha Caro and Co.—will be worth at least £500,000 annually, and an initial stock of 100 tons of phosphor bronze has already been sent to Peter Crowe and Co.

The manufacturing division of WADHAM STRINGER, British Leyland and Rolls-Royce distributor, commercial vehicle body and boat builder, has received its largest single contract worth £500,000, for the supply of 141 ambulances to the Thames Regional Health Authority.

A £280,000 contract has been received by the Manchester office of FORG-WARRER'S YORK-ROPE DIVISION to supply and commission a refrigeration system designed by the company's French

associate, LE FROID and TRIEL, Paris, for a new liquefaction plant being built by ICI at Lestock, Cheshire. The plant will have a capacity of 20,000 tonnes of chlorine a year.

PYROK (SURFACE PREPARATIONS), of Highbridge, has awarded a contract worth over £300,000 for the fire protection to steelwork in the Cee Area Shopping Development, Milton Keynes New Town. The contract is for its Pyrok fire protection and its Rap dry cladding system.

Orders worth nearly £250,000 have been placed with SETTE (a Decca company) by Babs Moxey and Redpath Dorman as part of the redevelopment programme for British Corporation's Ravenscroft W. Motherwell. Setpoint is to design and supply the complete wet and interlock systems control the vessel additions to three oxygen steel converters.

A pharmaceutical process area is to be built for industries by the FISHER CI environmental engine organisation. Under the terms of a £165,000 packaged deal, a Group has contracted to upgrade existing factory area—structure and electricals—at Girvan, land and to convert the area to clean room standards, manufacturing aspirin and tabletting drugs. Overall responsibility for the project has been placed with Fisher Group Ltd, which will liaise with Engineering Department in design of the installation. Contract management will be provided from Glasgow by Group Scotland.

The Australian Directors Civil Aviation is to use a Cessna 441 2720 airborne miniature transponder as a monitor for ground SSR systems. It will provide for performance monitoring of intercept, gathering SSR data for Aust civil/military air traffic on COSSOR. ELECTRONICS supply the SSR 2720 transponder also to the Kenyan Air Force. It is understood that the unit is to retrofit these units in Strikemaster, Navajo and Cessna.

MARCONI COMMUNICATIONS SYSTEMS, a GEC-Marconi company, is to supply more Mk. VIII colour television cameras and a range of equipment to the Church of England Vision Centre. They will be used to extend the facilities of the studio at Rushley, Hereford. Marconi re-equipped in 1972.

...ion cuts  
...to local  
...ment

...demand falls

...TERMIN STATE

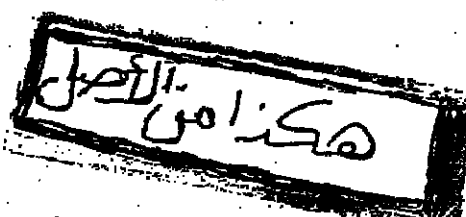
...le Parsons

...oved half year

FRANCIS G

## The Globalists...

Our international division alone lends an average of \$15 million an hour, 24 hours a day, 365 days a year, to banks, governments, corporations and businesses overseas. Consider the source.



Manufacturers Hanover  
The banking source. Worldwide  
Incorporated with Limited Liability in U.K.



the Korea Trade Centre invites you to at:

**KOREAN PRODUCTS SHOW**

**MANCHESTER**

SEPT. 23, MIDLAND Hotel (Stanley Room) Peter Street.

**GLASGOW**

SEPT. 25, ALBANY Hotel (Douglas Suite) Borthwell Street.  
Clothing, fabrics, toys, new ideas, gifts, general goods.  
London 01-240 3192.



# INTERNATIONAL COMPANY NEWS EURO MARKETS

## EUROBONDS

### Nippon Steel raising \$50m.

By Mary Campbell

THE SPATE of new issues continued last week with three further names tapping the dollar sector of the market.

In the largest straight issue by a Japanese company to date, Nippon Steel is raising \$50m. for five years at an indicated coupon level of 9 1/2 per cent. Lead manager is Morgan & Co.

In addition to this, the Mortgage Bank of Finland is borrowing \$20m. for six years at an indicated 11 1/2 per cent. Lead manager is Hambrecht & Co. The Quebec Urban Community has also been formally announced maturity seven years, indicated coupon 9 1/2 per cent and lead manager Knechtelbank.

In the Canadian dollar sector,

Toronto Dominion Bank is borrowing \$20m. in an issue with Morgan & Co. as lead manager.

Hardly surprisingly in these circumstances, secondary market prices were again down last week. However the falls were relatively small.

Market sources suspect that in the case of the European Investment Bank's latest issue at least, the price is being held by the lead managers just at the point where it is not worth while for underwriters to sell on the open market.

The German Capital Markets Sub-committee has postponed the meeting it had scheduled for this week to decide whether to continue through October the

ban on issues by foreign borrowers. The meeting is now scheduled for the beginning of October, but no one expects the ban to be removed.

In the medium-term lending sector, Nicaragua is reportedly borrowing \$20m. for five years.

A number of Spanish borrowers are also reported in the market. Astilleros Espanoles for \$30m. and Empresa Nacional Hidroeléctrica y Española Ribagorçana (ENHER), which is a subsidiary of INI, for \$25m.

The latter borrowing is said to be in the form of a 15-year floating rate issue with a lender's option to redeem earlier. ENHER is reportedly arranging this borrowing but was not available for comment on Friday.

## Darling and Hodgson upturn

By Richard Roff

JOHANNESBURG, Sept. 14.

THE SOUTH African civil engineering group Darling and Hodgson, which is 40 per cent owned by Union Corporation, has reported pre-profit upturn from R2.7m. to R4.8m. for the six months to end-June which, after a slightly higher tax charge, raised earnings from 13.7 to 19.3c. This is on an ordinary share capital nearly 2m. shares higher than in the previous period, at 12m. mainly reflecting the acquisition of Hume Prestressed, a manufacturer of concrete products.

The latest figures, however, do not include the shares issued two months ago as a result of the company's 30-for-100 rights issue, which raised R5m. Thus the dividend is up half a cent to 5c and the board forecasts that the out-turn for the full year will be at least equal to the 1974 figure after allowing for the further 30 per cent rise in share capital.

Taken with the observation that the second half of the year historically produces better profits than the first half, a trend confirmed by current trading, an overall rise from last year's 13.5c dividend total is clearly indicated, a move which will no doubt be welcomed by Union Corporation.

The results also show the general buoyancy of the civil engineering sector and the confidence such as road construction and quarrying, stemming from the massive current expenditure on infrastructure in South Africa. In the current bullish mood on the Johannesburg Stock Exchange, 391 around the same as the Y2.74bn. earned for the previous six months, a company spokesman told Reuters.

However, business has been stagnant in the current period, because of poor sales of heavy electric machinery, motors, pumps and elevators, and the company has had to sell land worth about R2bn. he said.

It hopes to declare an unchanged interim dividend of Y2.5, though it may have to reduce it to Y2.0. Gross sales will be about Y300bn., little changed from the Y295bn. of 1974, he added.

Reuter

## AUSTRALIAN WEEKLY LIST

Australian \$	Sept. 12	Sept. 5	Australian \$	
Advertiser Newspapers		+11.12	Atyl Ltd.	
Cons. Transport	+0.86		M.L.O.	
Ed. Securities	+0.59		Bank Corp.	
Ed. Granite	+1.43		Mayne Nickless	
Ed. Paper Mfrs'g	+1.08	+1.05	Nylex Corporation	
Ed. Paper Mfrs'g	+1.76	+1.75	Olympic Cons.	
Ed. Paper Mfrs'g	+1.23	+1.22	Olympic Cons.	
Ed. Paper Mfrs'g	+1.58	+1.57	Peterbilt	
Ed. Paper Mfrs'g	+1.46	+1.45	Peterbilt	
Ed. Paper Mfrs'g	+1.24	+1.23	Queensland Cement	
Ed. Paper Mfrs'g	+1.20	+1.20	Queensland Cement	
Ed. Paper Mfrs'g	+1.25	+1.24	South Industries	
Ed. Paper Mfrs'g	+1.25	+1.24	South Industries	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs'g	+1.25	+1.24	Swiss Recovery	
Ed. Paper Mfrs				











\_\_\_\_\_



The Liner Concrete  
 Machinery Co. Ltd.  
 Park Road, Garshead,  
 Tyne and Wear NE5 3HR.  
 Tel: 0632-772501


# FINANCIAL TIMES

Monday September 15 1975

**GF**  
 GEORGE FISCHER &  
 Pipe fittings in metal  
 and plastics  
 cutting and screwing  
 in metal and plastic  
 LONDON-BEDFORD-HUNTING

## Workers back ship repair deal

 By James McDonald  
 Shipping Correspondent

AN AGREEMENT—believed to be a breakthrough between ship repair unions and management—has been reached between the unions representing ship repair workers in Southampton and the Vospers Thornycroft ship repair division.

To encourage cargo ships to come to Southampton for repairs, crews will be allowed to do work that has been the sole prerogative of the repair workers.

"To my knowledge this is the first formal agreement between unions and management in this sector," said a spokesman for the General Council of British Shipping last night.

The decision by Southampton workers employed by Vospers Thornycroft—the city's only major ship repair organisation—stems from their concern over the number of large passenger liners being taken out of service with, apparently, no hope of replacement. This dearth of liners has created considerable uncertainty in Southampton.

British's prominent passenger liner port, about future employment in ship repairing in the area.

It is hoped that the new agreement will bring in cargo vessels to replace the passenger ships and help to ensure a continuing flow of work.

"Crew working is especially attractive to owners of foreign vessels wishing to have their ships repaired in Southampton, since their crews would normally remain aboard in any case while the ship is under repair," said a Vospers Thornycroft statement.

"There are obvious savings in costs if the crews can be usefully employed. The company added, however, that the arrangement would be subject to review from time to time.

Commenting on the agreement, Mr. J. A. Wilde, the company's managing director (repairs), said: "It will be a great help in attracting foreign ships to the port for repair. It is also an excellent example of the responsible and co-operative view the unions in Southampton take of the problem of ship repairing at a time when changes in the pattern of traffic are making it necessary to modify existing practices. This had to be done to remain competitive with other yards on the Continent and in the U.K."

## Weather

### U.K. TO-DAY

Generally cloudy with showers, but mostly dry in Scotland and N. Ireland.  
 London, S.E. Cent. S. and N. England.  
 Sunny periods, scattered showers. Wind N., moderate. Max 14C (57F).

E. Anglia, E. England. Showers, perhaps heavy. Sunny intervals. Wind N., moderate or fresh. Max 13C (55F).

Channel Isles, S.W. England, S. Wales.  
 Sunny spells, occasional showers. Wind N., moderate. Max 14C (57F).

N. Wales, N.E. and N.W. England, Lakes, I. of Man, Borders, Edinburgh, Dundee, Aberdeen, S.W. Scotland, Glasgow.  
 Sunny spells, occasional showers. Becoming mainly dry. Wind N.W., moderate. Max 13C (55F).

Cent. Highlands, Argyll, N.W. Scotland, N. Ireland.  
 Occasional showers. Cloud increasing. Wind N.W., backing West, light or moderate. Max 13C (55F).

Moray Firth, N.E. Scotland, Orkney, Shetland.  
 Scattered showers early, becoming mainly dry. Wind N.W., backing West, light. Max 12C (54F).

Lighting-up: London 18.48, Manchester 18.58, Glasgow 20.08, Belfast 20.14.

### BUSINESS CENTRES

City	Time	Temp	Wind	Cloud
Amsterdam	10.00	10	W	10
Brussels	10.00	10	W	10
Frankfurt	10.00	10	W	10
Geneva	10.00	10	W	10
London	10.00	10	W	10
Madrid	10.00	10	W	10
Paris	10.00	10	W	10
Rome	10.00	10	W	10
Stockholm	10.00	10	W	10
Switzerland	10.00	10	W	10
Vienna	10.00	10	W	10
Zurich	10.00	10	W	10

### HOLIDAY RESORTS

City	Time	Temp	Wind	Cloud
Amsterdam	10.00	10	W	10
Brussels	10.00	10	W	10
Frankfurt	10.00	10	W	10
Geneva	10.00	10	W	10
London	10.00	10	W	10
Madrid	10.00	10	W	10
Paris	10.00	10	W	10
Rome	10.00	10	W	10
Stockholm	10.00	10	W	10
Switzerland	10.00	10	W	10
Vienna	10.00	10	W	10
Zurich	10.00	10	W	10

## EEC to look again at Hong Kong quotas plea

BY RHYS DAVID

TALKS ARE expected to be resumed in Brussels this week between Hong Kong representatives and the EEC Commission on the colony's request for some relaxation in quota controls on textile and clothing imports into the Community.

Importers and Hong Kong manufacturers are claiming that a substantial quantity of orders for Europe, placed before the introduction of controls in July, are being held up because quotas are not available and there are reports from some U.K. importing houses of a black market already developing involving the sale of quotas.

### Selling quotas

A leading U.K. sportswear importer who buys in Hong Kong and sells around the world claimed last week that some Hong Kong manufacturers were now finding it more profitable to sell their quotas than the goods themselves. He claimed goods for which quotas had been obtained were now being offered at as much as 30 per cent above the previous price.

The Hong Kong representatives will be seeking to have some of next year's quota brought forward in order to ease the problem, and although there has been considerable opposition from European textile industries to any easing of the new arrangements so soon after agreement was reached, and at a time when the industry is still in deep recession, it is thought some compromise will be reached.

The move comes at a time, however, when the British Government is under strong pressure from the UEC to introduce selective controls on a number of import items including textiles, cars and television tubes, in order to save jobs currently being lost or at risk in those industries.

But although the need for restraint is certain to be pressed on the Japanese by Mr. Peter Shore, the Secretary for Trade, who is visiting the Far East, it is thought the Government is maintaining its reluctance to consider selective measures because of the difficulty of singling out which sectors should qualify and because of the possibility of retaliation.

Mr. Wilson promised on Friday, in a speech at the opening of a new Textile Industries laboratory, that

the Government would be prepared to act to help industries suffering serious injury as a result of imports, but he was evidently still thinking of use of anti-dumping regulations and similar measures rather than any new moves.

### Initial confusion

The claim made by U.K. importers that a black market in Hong Kong is certain to be studied with interest, though it may well be that this only reflects the initial confusion following the imposition of quotas on a number of textile and clothing products for the first time.

If it does result in a general increase in the price of imported textiles from Hong Kong, this could have important implications. In the first place it will result in a higher import bill and will mean an increase in the prices which the consumer will have to pay in the shops for clothing—a direct blow to the efforts to hold down inflation. In the longer term, however, it is certain to result in importing houses looking to other sources of supply, including U.K. manufacturers.

Some Loyalists also believe Colonel Khedafi's Government might be persuaded to help an independent Ulster over its inevitably serious economic problems.

The Libyans apparently do not understand why Loyalists and Republicans should fight each other. It is said that any further involvement would depend upon the two camps settling their differences, perhaps in a common anti-British front.

## Libya emissary in talks with Ulster Loyalists

BY OUR OWN CORRESPONDENT

BELFAST, Sept. 14.

THE IRISHMAN who provided the link between Ulster paramilitary groups and the Libyan Government leading to the visit by an Ulster Defence Association emissary to Libya, last year, has been meeting Loyalists in Ulster this week-end.

He is Mr. Edward O'Donnell, a native of Co. Monaghan. His visit is apparently a fact-finding one for the Libyan Government which, after initially supplying money to the IRA, seems to have realised that the Irish

question is not as simple as it first believed. Mr. O'Donnell visited both Belfast and Londonderry, seeing Mr. Glen Barr, chairman of the Loyalist paramilitary co-ordinating committee, among others.

There seems no suggestion that arms were discussed, but there is a belief among both Loyalists and Republicans that Libya might give economic aid to Ireland if the British presence was removed.

## Mrs. Thatcher facing U.S. questions on N. Sea oil

BY PAUL LEWIS

WASHINGTON, Sept. 14.

MRS. MARGARET THATCHER is likely to be closely questioned about her plans for denationalising North Sea oil, during her talks with the Ford Administration here next week.

American officials are now becoming increasingly concerned about the slow rate of oil extraction from the North Sea and its rising cost, which they fear may imperil what is widely regarded as Britain's last economic lifeline.

Her remarks about reversing the Labour Government's participation plans in Aberdeen last week have therefore been welcomed as an effort to correct some of the uncertainty this policy is causing North Sea oil developers already worried by mounting costs and a speed up the rate of extraction.

The U.S. Administration has

an interest in protecting American-owned oil companies with North Sea concessions—although it is emphasised here that its primary concern at the moment is to ensure Britain does not throw away its sole remaining economic asset.

Finally, the U.S. is anxious to see North Sea oil flowing as quickly as possible to increase the downward pressure on the OPEC price by cutting Britain's reliance on the cartel's exports.

On Thursday, Mrs. Thatcher will have breakfast with Dr. Kissinger, the Secretary of State, and will call on President Ford later in the morning. She will also be visiting Mr. William Simon, the Treasury Secretary, Dr. James Schlesinger, the Secretary of Defence, and Dr. Johannes Witteveen, managing

director of the International Monetary Fund, as well as leading congressmen and senators.

Her visit to the U.S. opens in New York to-morrow, where she will be meeting Mayor Beame, Mr. David Rockefeller of Chase Manhattan Bank, and Dr. Kurt

Waldheim, the Secretary-General of the U.N. She will also be addressing the Council of Foreign Relations among other bodies.

Next week she goes to Chicago to deliver the Walter Heller Memorial finance lecture at Roosevelt University, and then to Ottawa for talks with the Canadian Government on her way back to London.

Mrs. Margaret Thatcher, Tory North Sea oil intentions will interest the Ford administration.

Waldheim, the Secretary-General of the U.N. She will also be addressing the Council of Foreign Relations among other bodies.

Next week she goes to Chicago to deliver the Walter Heller Memorial finance lecture at Roosevelt University, and then to Ottawa for talks with the Canadian Government on her way back to London.

Mrs. Margaret Thatcher, Tory North Sea oil intentions will interest the Ford administration.

## Bank of America takes City lease

BY QUENTIN GUIRDHAM

BANK OF AMERICA has leased a major City office block, Gateway House, near St. Paul's, as a new headquarters for its European, Middle East and African divisions.

The building, originally occupied by Wiggins Teape, was bought by the Imperial Group Pension Funds for £27.7m, near the top of the property market in 1972. With renovation work done, the cost now exceeds £32m.

Bank of America is thought to be paying the pension funds a rent of about £12 a square foot. The net office space is 118,000 square feet.

This is below the price being asked for several other City buildings. But the letting comes at a time when, according to a new estimate by agents Richard Sanders, tenants are being sought for 2.6m. square feet of City offices.

### Major operations

Mr. A. C. Rice, an executive vice-president of the Bank of America, said: "The move brings our major operations in London under one roof. In addition to the obvious efficiencies achieved, it affords a presence in the City of London consistent with the size and scope of our activities here."

As well as its London branch, the building at 25 Cannon Street will house the bank's Europe, Middle East and Africa Division, moved from San Francisco to London in 1974, and its International Financial Centre, the main foreign exchange operation outside the U.S.

After further alterations, 750 staff will move into the building, which may be renamed, next summer.

## Plan to boost earnings from tourism

The Government plans to make the most of tourism to help Britain pay its way, the Treasury says in the Economic Progress Report.

"During recent years Britain's tourist industry has received heavy investment with Government assistance. Consequently, it has the capacity for considerable further expansion. The Government's aim is to maximise tourism's contribution to our ability as a nation to pay our way."

## Labour MPs attack pension increases

FINANCIAL TIMES REPORTER

SOME Labour MPs yesterday strongly criticised the 440-week pension increases that a small number of former senior civil servants will receive in December.

Mr. William Molloy (Ealing North) chairman of the Party's Social Services Group, said the increase was not merely "unfair and unjust," but could be the torpedo which would sink the Government's 55 policy.

The fact that some of the pension increases announced last week would amount to more than £2,000 a year for some senior public servants was controversial. The Civil Service Department yesterday.

The increases would be added to their present pensions of around £3,000 a year. But a spokesman said this was not in breach of the Government's policy. The Employment Secretary, Mr. Michael Foot, had already announced that the limits would not apply to pensions.

Of the 1m. former public employees whose pensions had been reviewed, including civil servants, teachers, doctors, health service employees and policemen, only about 100 would be obtaining increases of more than £2,000 a year. This would include people like retired Under-Secretaries and judges.

As a Press notice issued last week made clear, the average increase would be £350 a year. This would apply to the overwhelming majority and the bulk of them would be receiving less than £5 a week.

The increases were made under the Conservatives 1971 Pensions Increases Act which linked pensions to the cost of living index.

Mr. Molloy said yesterday he would be contacting the Minister of State for Health, Mr. Brian O'Malley, to-day asking for full details of this "astounding and disturbing situation."

At this time, in unemphatically, it was "imbecile" that some should receive a pension increase which, in total, was greater than unemployment pay received by 32 per cent — a total of 1,403.

## THE LEX COLUMN

## For whom the gong sounds

It promises to be a tricky or two windfalls like colour TV for two of our largest companies—Distillers and Rank Organisation, with a combined equity capitalisation of some £600m. Both shares have come back around 30 per cent from the 1975 peak, although the All-Share Index is only a tenth off its high. For DCL on Thursday the annual meeting may not be quite the cosy affair it is accustomed to, given the growing institutional disquiet over the group's tendency to produce nasty surprises. And it looks as though Rank's top management is in a shambles less than a year after the accession of Mr. Graham Dowson as chief executive.

For DCL the problem is not simply that the group is performing badly—pre-tax profits fell from £84.2m. to £71m. last year—for trading conditions are undoubtedly tough. Rather, it is that the group has appeared to be slow to adjust to events, and has failed to provide adequate explanations for its failure to meet its targets.

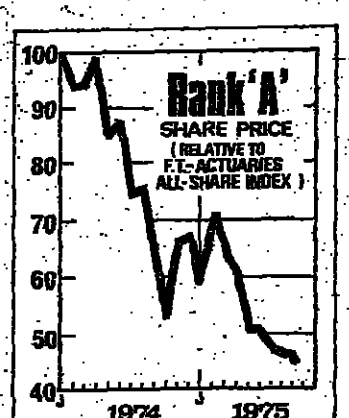
Moreover DCL's status as a very widely held institutional investment automatically puts it in the forefront of any moves to narrow the gap between the City and industry. This is a very different case to that of Rank, which is not really an institutional share in the U.K. (though institutions figure fairly heavily in the 45 per cent North American shareholdings).

In general, the City has had to come to terms with some of Rank's less pleasant characteristics, such as its undisciplined takeover activity (though it has had to pull in its horns recently) and its exploitation of Non-Voting shares. To a large extent the institutions have voted in the only way they can—with their feet—and indeed many insurance companies turned away the profitable undervoting opportunity at the time of the share issue last April.

Times change, however, and the City is under increased political pressure to keep its house in order. The situation is made more fascinating by the presence on Rank's Board of Lord O'Brien, who in his Bank of England days was trying to get institutional shareholders to set up a troubleshooting body.

There is no evidence that any new trading problems are imminent at Rank—indeed, one

executive, with one of the full-timers on the verge of leaving. That scarcely looks like a healthy situation given that the trading outlook for Rank's leisure interests is unlikely to improve in the near future, and bearing in mind that the high gearing may require some far-reaching decisions to be taken on corporate strategy. Not only Rank's shareholders will be the losers if the opportunity is missed to put the group's management on a broader basis.



### P.O. Orders

Uncertainty about the level of Post Office orders has been one of the main factors holding back Plessey's share price in recent weeks. So the confirmation, in the event, that orders will be cut back at least 25 per cent below the previously planned level from this year onwards had little impact on the price. There was rather more, however, on GEC's following its announcement of substantial redundancies.

Nevertheless, the physical effect on Plessey, in particular, could be significant, since its sales to the Post Office accounted for 27 per cent of total turnover last year, and for nearly 40 per cent of U.K. operations. The Post Office has already been cutting back on its demand for telephone equipment for some time—overall orders in volume terms drop 5.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

### SE Art Society

The Stock Exchange Society announces that Exhibition will be held Drapers' Hall, Thread Street, from November 28. A Private View opens for their friends, will take on Tuesday, November 25.45 p.m.

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve

Equities rise 3.3%  
 gifts improve